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VOLUME III OF III
REMEDIAL INVESTIGATION

**REMEDIAL INVESTIGATION/FEASIBILITY STUDY
H.O.D. LANDFILL
ANTIOCH, ILLINOIS**

Prepared For:

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January 1997



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APPENDIX O

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APPENDIX O-1

**DATA QUALITY SUMMARY, DATA QUALIFIER DEFINITIONS
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DATA QUALITY SUMMARY, DATA QUALIFIER DEFINITIONS, AND ANALYTICAL DATA RESULTS

This appendix provides analytical reports, data qualifier definitions, and a summary of the data quality for analyses performed on samples collected during May through July 1993, and March of 1994 at the H.O.D. Landfill.

The analytical data has been computerized in a format organized to facilitate data review and evaluation. The computerized data set includes the data qualifiers provided by the performing laboratory as well as data qualifiers added by the data reviewer in accordance with the data validation procedures. The assessment of data quality is based on laboratory and field quality control (QC) criteria as described in the Quality Assurance Project Plan (QAPP). Data validation was performed on laboratory analyses according to U.S. EPA guidelines.

DATA QUALITY SUMMARY

Laboratory results for Round 1 groundwater, private well water, surface water, leachate, landfill gas, and surface soils collected during May through July 1993 and Round 2 groundwater, surfacewater, sediments and village well water samples collected in March of 1994 at the HOD Landfill were qualified by the laboratory and during the data validation.

The laboratory-provided qualifiers (LQs) will include such items as:

- Non-detects
- Concentration below required detection limit
- Estimated concentration due to poor QC data
- Concentration of chemical also found in the laboratory blank

The data validation qualifiers (DVQs) will indicate whether the data are:

- Usable as a quantitative concentration
- Usable with caution as an estimated concentration
- Unusable due to out-of-control QC results

For the H.O.D. Landfill RI/FS, Round 1 estimated results are considered acceptable for use in site characterization and evaluation. Unusable results can not be used for site characterization and evaluation.

Round 1 private residence well results for the volatile organic compounds 2-butanone, 2-hexanone, and acetone are qualified as unusable and flagged "R" due to response factors below acceptable QC limits of 0.05. These compounds may or may not be present in the qualified samples.

The Round 1 surface water matrix field blank (HD-SWFB01-01) for cyanide was lost during analysis. Because cyanide was not detected in any investigative samples, this loss does not affect the data quality.

Round 2 data collected during March of 1994 and qualified as unusable includes the VOCs acetone and methylene chloride. Internal standard recoveries for the sediment samples were all less than acceptable QC limits; samples were re-analyzed as required by the SOW. Low recoveries are likely due to matrix related interferences. Results between the two analyses indicate acetone and methylene chloride results are likely the result of laboratory contamination. Because the method blanks did not contain these common laboratory contaminants, detects have been qualified as unusable (R) rather than elevating the detection limit.

Round 2 private well results for 2-butanone and acetone are qualified as unusable (R) due to response factors below acceptable QC limits of 0.05.

The remainder of the analytical data for samples collected during May through July 1993 (Round 1) and in March 1994 (Round 2) at the H.O.D. landfill is acceptable for use in site characterization and evaluation.

SUMMARY OF DATA QUALIFIER DEFINITIONS

Laboratory qualified data are flagged by the performing laboratory. Data may be further qualified by Warzyn personnel during the data validation process. Data qualifiers are letter or symbol codes as outlined below. If data are qualified, the qualifiers are presented with results. The data validation qualifiers (DVQ) and laboratory qualifiers (LQ) are presented with the data as separate columns.

Laboratory Qualifier Definitions

The following qualifiers were used by laboratories performing the various analyses. The qualifiers defined below are presented in the "LQ" column adjacent to the result.

Laboratory Qualifiers for Organic Analysis

- U – Indicates the compound was analyzed for, but was not detected. The sample quantification limit is corrected for dilution and for percent moisture.
- J – Indicates an estimated value. This flag is used either when estimating a concentration for Tentatively Identified Compounds (TICs) where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria, yet the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.

- N – Indicates presumptive evidence of a compound. This flag is used only for TICs where the identification is based on a mass spectral library search. It is applied to all TIC results.
- B – This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified compound. (Note the difference between the LQ inorganic qualifier B and the LQ organic qualifier B.)
- E – This flag identifies a compound where the concentration exceeded the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed. If the dilution of the extract cause any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported.
- D – This flag identifies a compound that was identified in an analysis at a secondary dilution factor.
- P – This flag is used for a pesticide/PCB target compound when there is a greater than 25% difference for the detected concentrations between the two GC columns. The lower of the two values is reported.
- C – This flag applies to pesticide results where the identification has been confirmed by GC/MS.
- A – This flag indicates that a TIC is a suspected aldol condensation product.
- X – X, Y, and Z flags may be designated by the laboratory to properly define the results. For example, X is often applied to semi-volatile data which were calculated manually (as opposed to computer generated) by the laboratory.
- Laboratory Qualifiers for Inorganic Analyses**
- B – This flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Contract Required Detection Limit (CRDL). (Note the difference between the LQ inorganic qualifier B and the LQ organic qualifier B.)
- U – Indicates analyte was analyzed for, but was not detected. The value reported is the instrument detection limit value (e.g., 10U).
- E – Indicates the value is estimated due to the presence of interference.
- S – Indicates the value was determined by the method of standard addition.

M – Indicates duplicate injection precision for furnace analysis was not met.

N – Indicates spike sample recovery was not within control limits.

* – Indicates duplicate analysis was not within control limits.

+ – Indicates the correlation coefficient for method of standard addition was less than 0.995.

W – Post-digestion spike for Furnace AA analysis was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.

Data Validation Qualifier Definitions

The following qualifiers were used by Warzyn personnel in the validation of laboratory results. Field QC samples (trip blanks, field blanks, field duplicates) were also evaluated during the data validation process. Validation of organics data was performed using *National Functional Guidelines for Organic Data Review*, U.S. EPA, June 1991. Inorganics data validation was performed using *Laboratory Data Validation, Functional Guideline for Evaluating Inorganic Analyses*, U.S. EPA, July 1988.

The data validation process was performed with specific project needs in mind. Data quality objectives and intended data usage, as outlined in the QAPP, were referenced. The data validation qualifiers defined below are presented with the data under the “DVQ” column.

Data Validation Qualifiers for Organic Analyses

J – The associated numerical value is an estimated quantity, because quality control criteria were not met and/or because the value was less than the CRQL. TICs are flagged as estimated (J).

U – Indicates compound was analyzed for, but was not detected. The associated value is the sample quantitation limit. The sample quantitation limit may be elevated due to contamination detected in laboratory blanks, field blanks, or trip blanks (for VOCs).

UJ – Indicates the compound was analyzed for, but was not detected. The associated numerical value is an estimated quantitation limit.

R – Quality control indicates the result is not usable (compound may or may not be present).

Data Qualifiers for Inorganic Analyses

J – The associated numerical value is an estimated quantity because quality control criteria were not met (i.e., out of control (low or high) spike recoveries, interferences in serial dilution, or poor correlation coefficients).

- R – Quality control data indicates that the value is not usable (analyte may or may not be present).
- U – Indicates analyte was analyzed for, but was not detected. The associated value is the sample quantitation limit. The sample quantitation limit may be elevated due to contamination detected in laboratory blanks or field blanks.
- UJ – The analyte was analyzed for, but was not detected. The associated numerical value is an estimated quantitation limit.

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APPENDIX O-2

LANDFILL GAS VOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GAS Type: GS VOC
Generated by: CAM
Date Issued: 21-SEP-93

Parameter	HD-LGLP01-91 06/04/93			HD-LGLP06-01 06/04/93			HD-LGLP07-01 06/04/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Freon 12 (PPB(V/V))		U/	4.	6300.	/	80.	1800.	/	400.
Chloromethane (PPB(V/V))		U/	5.		U/	6000.		U/	500.
Freon 114 (PPB(V/V))		U/	4.	7200.	/	80.		U/	400.
Vinyl chloride (PPB(V/V))		U/	5.	4900.	/	100.	21000.	/	500.
Bromomethane (PPB(V/V))		U/	6.		U/	120.		U/	600.
Chloroethane (PPB(V/V))	47.	/	10.	810.	/	200.		U/	1000.
Freon 11 (PPB(V/V))	78.	/	2.	12000.	D/	200.	270.	/	200.
cis-1,2-Dichloroethene (PPB(V/V))	6.3	/	4.	370.	/	80.	5400.	/	400.
Carbon disulfide (PPB(V/V))		U/	20.	690.	/	400.		U/	2000.
Freon 113 (PPB(V/V))		U/	4.		U/	80.		U/	400.
Acetone (PPB(V/V))		U/	20.	730.	/	400.	3900.	/	2000.
Methylene chloride (PPB(V/V))	95.	/	8.	220.	/	160.		U/	800.
trans-1,2-Dichloroethene (PPB(V/V))		U/	8.		U/	160.		U/	800.
1,1-Dichloroethane (PPB(V/V))		U/	5.	140.	/	100.	540.	/	500.
Vinyl acetate (PPB(V/V))		U/	5.		U/	100.		U/	500.
1,1-Dichloroethene (PPB(V/V))		U/	4.		U/	80.	480.	/	400.
2-Butanone (PPB(V/V))	21.	/	6.	1800.	/	120.	5200.	/	600.
Chloroform (PPB(V/V))		U/	4.		U/	80.		U/	400.
1,1,1-Trichloroethane (PPB(V/V))		U/	4.		U/	80.		U/	400.
Carbon tetrachloride (PPB(V/V))		U/	4.		U/	80.		U/	400.
Benzene (PPB(V/V))	10.	/	6.	420.	/	120.	970.	/	600.
1,2-Dichloroethane (PPB(V/V))		U/	4.		U/	80.		U/	400.
Trichloroethene (PPB(V/V))		U/	5.	160.	/	100.	2500.	/	500.
1,2-Dichloropropane (PPB(V/V))		U/	16.		U/	320.		U/	1600.
Bromodichloromethane (PPB(V/V))		U/	4.		U/	80.		U/	400.
cis-1,3-Dichloropropene (PPB(V/V))		U/	6.		U/	120.		U/	600.
4-Methyl-2-pentanone (PPB(V/V))		U/	12.		U/	280.		U/	1600.
Toluene (PPB(V/V))	540.	/	6.	11000.	/	120.	66000.	/	600.
trans-1,3-Dichloropropene (PPB(V/V))		U/	6.		U/	120.		U/	600.
1,1,2-Trichloroethane (PPB(V/V))		U/	6.		U/	120.		U/	600.
Tetrachloroethene (PPB(V/V))		U/	6.	270.	/	120.	4400.	/	600.
2-Hexanone (PPB(V/V))		U/	10.		U/	200.		U/	1000.
Dibromochloromethane (PPB(V/V))		U/	6.		U/	120.		U/	600.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GAS Type: GS VOC

Parameter	HD-LGLP08-01 06/04/93			HD-LGLP11-01 06/04/93			HD-LGLP11-91 06/04/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Freon 12 (PPB(V/V))	2100.	/	400.	9100.	/	400.	8600.	/	200.
Chloromethane (PPB(V/V))	720.	/	500.		U/	500.		U/	250.
Freon 114 (PPB(V/V))	760.	/	400.	860.	/	400.	940.	/	200.
Vinyl chloride (PPB(V/V))	13000.	/	500.	1100.	/	500.	1300.	/	250.
Bromomethane (PPB(V/V))		U/	600.		U/	600.		U/	300.
Chloroethane (PPB(V/V))		U/	1000.		U/	1000.		U/	500.
Freon 11 (PPB(V/V))		U/	200.	310.	/	200.	330.	/	100.
cis-1,2-Dichloroethene (PPB(V/V))	1400.	/	400.	2400.	/	400.	2700.	/	200.
Carbon disulfide (PPB(V/V))		U/	2000.		U/	2000.		U/	1000.
Freon 113 (PPB(V/V))		U/	400.		U/	400.		U/	200.
Acetone (PPB(V/V))	15000.	/	2000.		U/	2000.		U/	1000.
Methylene chloride (PPB(V/V))		U/	800.		U/	800.	520.	/	400.
trans-1,2-Dichloroethene (PPB(V/V))		U/	800.		U/	800.		U/	400.
1,1-Dichloroethane (PPB(V/V))		U/	500.		U/	500.		U/	250.
Vinyl acetate (PPB(V/V))		U/	500.		U/	500.		U/	250.
1,1-Dichloroethene (PPB(V/V))		U/	400.		U/	400.		U/	200.
2-Butanone (PPB(V/V))	22000.	/	600.		U/	600.	600.	/	300.
Chloroform (PPB(V/V))		U/	400.		U/	400.		U/	200.
1,1,1-Trichloroethane (PPB(V/V))		U/	400.		U/	400.		U/	200.
Carbon tetrachloride (PPB(V/V))		U/	400.		U/	400.		U/	200.
Benzene (PPB(V/V))	670.	/	600.	630.	/	600.	690.	/	300.
1,2-Dichloroethane (PPB(V/V))		U/	400.		U/	400.		U/	200.
Trichloroethene (PPB(V/V))	590.	/	500.	960.	/	500.	1000.	/	250.
1,2-Dichloropropane (PPB(V/V))		U/	1600.		U/	1600.		U/	800.
Bromodichloromethane (PPB(V/V))		U/	400.		U/	400.		U/	200.
cis-1,3-Dichloropropene (PPB(V/V))		U/	600.		U/	600.		U/	300.
4-Methyl-2-pentanone (PPB(V/V))		U/	4000.		U/	600.		U/	300.
Toluene (PPB(V/V))	53000.	/	600.	20000.	/	600.	21000.	/	300.
trans-1,3-Dichloropropene (PPB(V/V))		U/	600.		U/	600.		U/	300.
1,1,2-Trichloroethane (PPB(V/V))		U/	600.		U/	600.		U/	300.
Tetrachloroethene (PPB(V/V))	830.	/	600.	2700.	/	600.	2800.	/	300.
2-Hexanone (PPB(V/V))		U/	1000.		U/	1000.		U/	500.
Dibromochloromethane (PPB(V/V))		U/	600.		U/	600.		U/	300.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GAS Type: GSVOC

HD-LGTB01-01 06/04/93

Parameter	CONC	LQ/DVQ	RDL
Freon 12 (PPB(V/V))	U/	2.	
Chloromethane (PPB(V/V))	U/	2.5	
Freon 114 (PPB(V/V))	U/	2.	
Vinyl chloride (PPB(V/V))	U/	2.5	
Bromomethane (PPB(V/V))	U/	3.	
Chloroethane (PPB(V/V))	U/	5.	
Freon 11 (PPB(V/V))	U/	1.	
cis-1,2-Dichloroethene (PPB(V/V))	U/	2.	
Carbon disulfide (PPB(V/V))	U/	10.	
Freon 113 (PPB(V/V))	U/	2.	
Acetone (PPB(V/V))	U/	10.	
Methylene chloride (PPB(V/V))	U/	4.	
trans-1,2-Dichloroethene (PPB(V/V))	U/	4.	
1,1-Dichloroethane (PPB(V/V))	U/	2.5	
Vinyl acetate (PPB(V/V))	U/	2.5	
1,1-Dichloroethene (PPB(V/V))	U/	2.	
2-Butanone (PPB(V/V))	U/	3.	
Chloroform (PPB(V/V))	U/	2.	
1,1,1-Trichloroethane (PPB(V/V))	U/	2.	
Carbon tetrachloride (PPB(V/V))	U/	2.	
Benzene (PPB(V/V))	U/	3.	
1,2-Dichloroethane (PPB(V/V))	U/	2.	
Trichloroethene (PPB(V/V))	U/	2.5	
1,2-Dichloropropane (PPB(V/V))	U/	8.	
Bromodichloromethane (PPB(V/V))	U/	2.	
cis-1,3-Dichloropropene (PPB(V/V))	U/	3.	
4-Methyl-2-pentanone (PPB(V/V))	U/	3.	
Toluene (PPB(V/V))	U/	3.	
trans-1,3-Dichloropropene (PPB(V/V))	U/	3.	
1,1,2-Trichloroethane (PPB(V/V))	U/	3.	
Tetrachloroethene (PPB(V/V))	U/	3.	
2-Hexanone (PPB(V/V))	U/	5.	
Dibromochloromethane (PPB(V/V))	U/	3.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GAS Type: GS VOC

Parameter	HD-LGLP01-91 06/04/93			HD-LGLP06-01 06/04/93			HD-LGLP07-01 06/04/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
1,2-Dibromoethane (PPB(V/V))	U/	4.		U/	80.		U/	400.	
Chlorobenzene (PPB(V/V))	U/	5.		180.	/	100.	U/	500.	
Ethylbenzene (PPB(V/V))	34.	/	5.	3700.	/	100.	11000.	/	500.
Xylenes (total) (PPB(V/V))	52.	/	10.	7600.	/	200.	30000.	/	1000.
Styrene (PPB(V/V))	U/	14.		U/	280.		U/	1400.	
Bromoform (PPB(V/V))	U/	4.		U/	80.		U/	400.	
1,1,2,2-Tetrachloroethane (PPB(V/V))	U/	8.		U/	160.		U/	800.	
Benzyl chloride (PPB(V/V))	U/	4.		U/	80.		U/	400.	
4-Ethyl toluene (PPB(V/V))	U/	8.		520.	/	160.	1300.	/	800.
1,3,5-Trimethylbenzene (PPB(V/V))	U/	5.		200.	/	100.	510.	/	500.
1,2,4-Trimethylbenzene (PPB(V/V))	U/	6.		440.	/	120.	1200.	/	600.
1,3-Dichlorobenzene (PPB(V/V))	U/	6.		U/	120.		U/	600.	
1,4-Dichlorobenzene (PPB(V/V))	U/	8.		U/	160.		U/	800.	
1,2-Dichlorobenzene (PPB(V/V))	U/	10.		U/	200.		U/	1000.	
1,2,4-Trichlorobenzene (PPB(V/V))	U/	14.		U/	280.		U/	1400.	
Hexachlorobutadiene (PPB(V/V))	U/	10.		U/	200.		U/	1000.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.
Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: GAS Type: GSVOC

Parameter	HD-LGLP08-01 06/04/93			HD-LGLP11-01 06/04/93			HD-LGLP11-91 06/04/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
1,2-Dibromoethane (PPB(V/V))		U/	400.		U/	400.		U/	200.
Chlorobenzene (PPB(V/V))	4500.	/	500.		U/	500.		U/	250.
Ethylbenzene (PPB(V/V))	9700.	/	500.	3200.	/	500.	3400.	/	250.
Xylenes (total) (PPB(V/V))	24000.	/	1000.	7000.	/	1000.	7100.	/	500.
Styrene (PPB(V/V))		U/	1400.		U/	1400.		U/	700.
Bromoform (PPB(V/V))		U/	400.		U/	400.		U/	200.
1,1,2,2-Tetrachloroethane (PPB(V/V))		U/	800.		U/	800.		U/	400.
Benzyl chloride (PPB(V/V))		U/	400.		U/	400.		U/	200.
4-Ethyl toluene (PPB(V/V))	2600.	/	800.		U/	800.	490.	/	400.
1,3,5-Trimethylbenzene (PPB(V/V))	910.	/	500.		U/	500.		U/	250.
1,2,4-Trimethylbenzene (PPB(V/V))	2100.	/	600.		U/	600.	420.	/	300.
1,3-Dichlorobenzene (PPB(V/V))		U/	600.		U/	600.		U/	300.
1,4-Dichlorobenzene (PPB(V/V))		U/	800.		U/	800.		U/	400.
1,2-Dichlorobenzene (PPB(V/V))		U/	1000.		U/	1000.		U/	500.
1,2,4-Trichlorobenzene (PPB(V/V))		U/	1400.		U/	1400.		U/	700.
Hexachlorobutadiene (PPB(V/V))		U/	1000.		U/	1000.		U/	500.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: GAS Type: GSVOC

HD-LGTB01-01 06/04/93

Parameter	CONC	LQ/DVQ	RDL
1,2-Dibromoethane (PPB(V/V))	U/	2.	
Chlorobenzene (PPB(V/V))	U/	2.5	
Ethylbenzene (PPB(V/V))	U/	2.5	
Xylenes (total) (PPB(V/V))	U/	5.	
Styrene (PPB(V/V))	U/	7.	
Bromoform (PPB(V/V))	U/	2.	
1,1,2,2-Tetrachloroethane (PPB(V/V))	U/	4.	
Benzyl chloride (PPB(V/V))	U/	2.	
4-Ethyl toluene (PPB(V/V))	U/	4.	
1,3,5-Trimethylbenzene (PPB(V/V))	U/	2.5	
1,2,4-Trimethylbenzene (PPB(V/V))	U/	3.	
1,3-Dichlorobenzene (PPB(V/V))	U/	3.	
1,4-Dichlorobenzene (PPB(V/V))	U/	4.	
1,2-Dichlorobenzene (PPB(V/V))	U/	5.	
1,2,4-Trichlorobenzene (PPB(V/V))	U/	7.	
Hexachlorobutadiene (PPB(V/V))	U/	5.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-3

LEACHATE VOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: VOC
Generated by: CAW
Date Issued: 21-SEP-93

	HD-LCFB01-01 05/13/93			HD-LCLP01-01 05/13/93			HD-LCLP01-91 05/13/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	25.		U/	50.
Bromomethane (UG/L)		U/	10.		U/	25.		U/	50.
Vinyl chloride (UG/L)		U/	10.		U/	25.		U/	50.
Chloroethane (UG/L)		U/	10.	45.	/	25.	46.	J/	50.
Methylene chloride (UG/L)	1.	J/	10.	160.	/	25.	180.	/	50.
Acetone (UG/L)	13.	/J	10.	110.	/	25.		/U	91.
Carbon disulfide (UG/L)		U/	10.		U/	25.		U/	50.
1,1-Dichloroethene (UG/L)		U/	10.		U/	25.		U/	50.
1,1-Dichloroethane (UG/L)		U/	10.		U/	25.		U/	50.
1,2-Dichloroethene (total) (UG/L)		U/	10.	7.	J/	25.		U/	50.
Chloroform (UG/L)		U/	10.		U/	25.		U/	50.
1,2-Dichloroethane (UG/L)		U/	10.		U/	25.		U/	50.
2-Butanone (UG/L)		U/	10.	190.	/	25.		U/	50.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	25.		U/	50.
Carbon tetrachloride (UG/L)		U/	10.		U/	25.		U/	50.
Bromodichloromethane (UG/L)		U/	10.		U/	25.		U/	50.
1,2-Dichloropropane (UG/L)		U/	10.		U/	25.		U/	50.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	25.		U/	50.
Trichloroethene (UG/L)		U/	10.		U/	25.		U/	50.
Dibromochloromethane (UG/L)		U/	10.		U/	25.		U/	50.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	25.		U/	50.
Benzene (UG/L)		U/	10.	12.	J/	25.	13.	J/	50.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	25.		U/	50.
Bromoform (UG/L)		U/	10.		U/	25.		U/	50.
4-Methyl-2-pentanone (UG/L)		U/	10.	22.	J/	25.	22.	J/	50.
2-Hexanone (UG/L)		U/	10.	14.	J/J	25.		U/	50.
Tetrachloroethene (UG/L)		U/	10.	9.	J/	25.		U/	50.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	25.		U/	50.
Toluene (UG/L)		U/	10.	330.	/	25.	450.	/	50.
Chlorobenzene (UG/L)		U/	10.		U/	25.		U/	50.
Ethylbenzene (UG/L)		U/	10.	52.	/	25.	46.	J/	50.
Styrene (UG/L)		U/	10.		U/	25.		U/	50.
Xylenes (total) (UG/L)		U/	10.	100.	/	25.	90.	/	50.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: VOC

	HD-LCLP06-01 05/13/93			HD-LCLP08-01 05/13/93			HD-LCLP11-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	250.		U/	1000.		U/	500.
Bromomethane (UG/L)		U/	250.		U/	1000.		U/	500.
Vinyl chloride (UG/L)		U/	250.		U/	1000.		U/	500.
Chloroethane (UG/L)		U/	250.		U/	1000.		U/	500.
Methylene chloride (UG/L)	58.	J/	250.		U/	1000.		U/	500.
Acetone (UG/L)	2200.	/	250.	19000.	J/	1000.	1500.	J/	500.
Carbon disulfide (UG/L)		U/	250.		U/	1000.		U/	500.
1,1-Dichloroethene (UG/L)		U/	250.		U/	1000.		U/	500.
1,1-Dichloroethane (UG/L)		U/	250.		U/	1000.		U/	500.
1,2-Dichloroethene (total) (UG/L)		U/	250.		U/	1000.	190.	J/	500.
Chloroform (UG/L)		U/	250.		U/	1000.		U/	500.
1,2-Dichloroethane (UG/L)		U/	250.		U/	1000.		U/	500.
2-Butanone (UG/L)	3200.	/	250.	12000.	/	1000.	3900.	/	500.
1,1,1-Trichloroethane (UG/L)		U/	250.		U/	1000.		U/	500.
Carbon tetrachloride (UG/L)		U/	250.		U/	1000.		U/	500.
Bromodichloromethane (UG/L)		U/	250.		U/	1000.		U/	500.
1,2-Dichloropropane (UG/L)		U/	250.		U/	1000.		U/	500.
cis-1,3-Dichloropropene (UG/L)		U/	250.		U/	1000.		U/	500.
Trichloroethene (UG/L)		U/	250.		U/	1000.		U/	500.
Dibromochloromethane (UG/L)		U/	250.		U/	1000.		U/	500.
1,1,2-Trichloroethane (UG/L)		U/	250.		U/	1000.		U/	500.
Benzene (UG/L)		U/	250.		U/	1000.		U/	500.
trans-1,3-Dichloropropene (UG/L)		U/	250.		U/	1000.		U/	500.
Bromoform (UG/L)		U/	250.		U/	1000.		U/	500.
4-Methyl-2-pentanone (UG/L)	160.	J/	250.	450.	J/	1000.		U/	500.
2-Hexanone (UG/L)		U/	250.		U/	1000.		U/	500.
Tetrachloroethene (UG/L)		U/	250.		U/	1000.		U/	500.
1,1,2,2-Tetrachloroethane (UG/L)		U/	250.		U/	1000.		U/	500.
Toluene (UG/L)	210.	J/	250.	260.	J/	1000.	740.	/	500.
Chlorobenzene (UG/L)		U/	250.		U/	1000.		U/	500.
Ethylbenzene (UG/L)		U/	250.		U/	1000.	130.	J/	500.
Styrene (UG/L)		U/	250.		U/	1000.		U/	500.
Xylenes (total) (UG/L)	170.	J/	250.		U/	1000.	330.	J/	500.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: VOC

	HD-LCMHE-01 05/13/93			HD-LCTB01-01 05/13/93			HD-LCTB02-01 05/13/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)	18.	/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)	44.	/	10.		U/	10.	3.	J/	10.
Acetone (UG/L)	140.	/J	10.		U/	10.	5.	J/J	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)	5.	J/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)	13.	/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)	70.	/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)	22.	/	10.		U/	10.		U/	10.
2-Butanone (UG/L)	120.	/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)	28.	/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)	14.	/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)	22.	/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)	43.	/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)	9.	J/J	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)	62.	/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)	41.	/	10.		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

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APPENDIX O-4

LEACHATE SVOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: SVOC
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-LCFB01-01 05/13/93			HD-LCLP01-01 05/13/93			HD-LCLP01-91 05/13/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		160.	/	50.	170.	/	54.
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	50.		U/	54.	
2-Chlorophenol (UG/L)	U/	10.		U/	50.		U/	54.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	50.		U/	54.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	50.		U/	54.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	50.		U/	54.	
2-Methylphenol (UG/L)	U/	10.		U/	50.		U/	54.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	50.		U/	54.	
4-Methylphenol (UG/L)	U/	10.	730.	D/	50.		760.	D/	54.
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	50.		U/	54.	
Hexachloroethane (UG/L)	U/	10.		U/	50.		U/	54.	
Nitrobenzene (UG/L)	U/	10.		U/	50.		U/	54.	
Isophorone (UG/L)	U/	10.		U/	50.		U/	54.	
2-Nitrophenol (UG/L)	U/	10.		U/	50.		U/	54.	
2,4-Dimethylphenol (UG/L)	U/	10.	12.	J/	50.		11.	J/	54.
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	50.		U/	54.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	50.		U/	54.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	50.		U/	54.	
Naphthalene (UG/L)	U/	10.		U/	50.		34.	J/	54.
4-Chloroaniline (UG/L)	U/	10.		U/	50.		U/	54.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	50.		U/	54.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	50.		U/	54.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	50.		U/	54.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	50.		U/	54.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	50.		U/	54.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	130.		U/	130.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	50.		U/	54.	
2-Nitroaniline (UG/L)	U/	26.		U/	130.		U/	130.	
Dimethylphthalate (UG/L)	U/	10.		U/	50.		U/	54.	
Acenaphthylene (UG/L)	U/	10.		U/	50.		U/	54.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	50.		U/	54.	
3-Nitroaniline (UG/L)	U/	26.		U/	130.		U/	130.	
Acenaphthene (UG/L)	U/	10.		U/	50.		U/	54.	

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: SVOC

Parameter	HD-LCLP06-01 05/13/93			HD-LCLP08-01 05/13/93			HD-LCLP11-01 05/12/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	83.	/	10.	840.	D/	52.	5.	J/	10.
bis(2-Chloroethyl) ether (UG/L)		U/	10.		U/	52.		U/	10.
2-Chlorophenol (UG/L)		U/	10.		U/	52.		U/	10.
1,3-Dichlorobenzene (UG/L)		U/	10.		U/	52.		U/	10.
1,4-Dichlorobenzene (UG/L)	5.	J/	10.		U/	52.	20.	/	10.
1,2-Dichlorobenzene (UG/L)		U/	10.		U/	52.		U/	10.
2-Methylphenol (UG/L)	16.	/	10.		U/	52.		U/	10.
bis(2-Chloroisopropyl)ether (UG/L)		U/	10.		U/	52.		U/	10.
4-Methylphenol (UG/L)	1300.	D/	10.	2200.	D/	52.	48.	/	10.
N-Nitroso-di-n-propylamine (UG/L)		U/	10.		U/	52.		U/	10.
Hexachloroethane (UG/L)		U/	10.		U/	52.		U/	10.
Nitrobenzene (UG/L)		U/	10.		U/	52.		U/	10.
Isophorone (UG/L)		U/	10.		U/	52.		U/	10.
2-Nitrophenol (UG/L)		U/	10.		U/	52.		U/	10.
2,4-Dimethylphenol (UG/L)	4.	J/	10.	20.	J/	52.	3.	J/	10.
bis(2-Chloroethoxy)methane (UG/L)		U/	10.		U/	52.		U/	10.
2,4-Dichlorophenol (UG/L)		U/	10.		U/	52.		U/	10.
1,2,4-Trichlorobenzene (UG/L)		U/	10.		U/	52.		U/	10.
Naphthalene (UG/L)	6.	J/	10.	26.	J/	52.	16.	/	10.
4-Chloroaniline (UG/L)		U/	10.		U/	52.		U/	10.
Hexachlorobutadiene (UG/L)		U/	10.		U/	52.		U/	10.
4-Chloro-3-methylphenol (UG/L)		U/	10.		U/	52.		U/	10.
2-Methylnaphthalene (UG/L)		U/	10.		U/	52.		U/	10.
Hexachlorocyclopentadiene (UG/L)		U/	10.		U/	52.		U/	10.
2,4,6-Trichlorophenol (UG/L)		U/	10.		U/	52.		U/	10.
2,4,5-Trichlorophenol (UG/L)		U/	26.		U/	130.		U/	26.
2-Chloronaphthalene (UG/L)		U/	10.		U/	52.		U/	10.
2-Nitroaniline (UG/L)		U/	26.		U/	130.		U/	26.
Dimethylphthalate (UG/L)		U/	10.		U/	52.		U/	10.
Acenaphthylene (UG/L)		U/	10.		U/	52.		U/	10.
2,6-Dinitrotoluene (UG/L)		U/	10.		U/	52.		U/	10.
3-Nitroaniline (UG/L)		U/	26.		U/	130.		U/	26.
Acenaphthene (UG/L)		U/	10.		U/	52.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

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ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: LEC Type: SVOC

HD-LCMHE-01 05/13/93

Parameter	CONC	LQ/DVQ	RDL
Phenol (UG/L)	19.	/	10.
bis(2-Chloroethyl) ether (UG/L)		U/	10.
2-Chlorophenol (UG/L)		U/	10.
1,3-Dichlorobenzene (UG/L)		U/	10.
1,4-Dichlorobenzene (UG/L)		U/	10.
1,2-Dichlorobenzene (UG/L)		U/	10.
2-Methylphenol (UG/L)		U/	10.
bis(2-Chloroisopropyl)ether (UG/L)		U/	10.
4-Methylphenol (UG/L)	5.	J/	10.
N-Nitroso-di-n-propylamine (UG/L)		U/	10.
Hexachloroethane (UG/L)		U/	10.
Nitrobenzene (UG/L)		U/	10.
Isophorone (UG/L)		U/	10.
2-Nitrophenol (UG/L)		U/	10.
2,4-Dimethylphenol (UG/L)	6.	J/	10.
bis(2-Chloroethoxy)methane (UG/L)		U/	10.
2,4-Dichlorophenol (UG/L)		U/	10.
1,2,4-Trichlorobenzene (UG/L)		U/	10.
Naphthalene (UG/L)		U/	10.
4-Chloroaniline (UG/L)		U/	10.
Hexachlorobutadiene (UG/L)		U/	10.
4-Chloro-3-methylphenol (UG/L)		U/	10.
2-Methylnaphthalene (UG/L)		U/	10.
Hexachlorocyclopentadiene (UG/L)		U/	10.
2,4,6-Trichlorophenol (UG/L)		U/	10.
2,4,5-Trichlorophenol (UG/L)		U/	26.
2-Chloronaphthalene (UG/L)		U/	10.
2-Nitroaniline (UG/L)		U/	26.
Dimethylphthalate (UG/L)		U/	10.
Acenaphthylene (UG/L)		U/	10.
2,6-Dinitrotoluene (UG/L)		U/	10.
3-Nitroaniline (UG/L)		U/	26.
Acenaphthene (UG/L)		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: SVOC

	HD-LCFB01-01 05/13/93			HD-LCLP01-01 05/13/93			HD-LCLP01-91 05/13/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)		U/	26.		U/	130.		U/	130.
4-Nitrophenol (UG/L)		U/	26.		U/	130.		U/	130.
Dibenzofuran (UG/L)		U/	10.		U/	50.		U/	54.
2,4-Dinitrotoluene (UG/L)		U/	10.		U/	50.		U/	54.
Diethylphthalate (UG/L)		U/	10.	32.	J/	50.	31.	J/	54.
4-Chlorophenyl-phenylether (UG/L)		U/	10.		U/	50.		U/	54.
Fluorene (UG/L)		U/	10.		U/	50.		U/	54.
4-Nitroaniline (UG/L)		U/	26.		U/	130.		U/	130.
4,6-Dinitro-2-methylphenol (UG/L)		U/	26.		U/	130.		U/	130.
N-nitrosodiphenylamine (UG/L)		U/	10.		U/	50.		U/	54.
4-Bromophenyl-phenylether (UG/L)		U/	10.		U/	50.		U/	54.
Hexachlorobenzene (UG/L)		U/	10.		U/	50.		U/	54.
Pentachlorophenol (UG/L)		U/	25.		U/	130.		U/	130.
Phenanthrene (UG/L)		U/	10.		U/	50.		U/	54.
Anthracene (UG/L)		U/	10.		U/	50.		U/	54.
Di-n-butylphthalate (UG/L)	1.	BB/	10.		U/	50.		U/	54.
Fluoranthene (UG/L)		U/	10.		U/	50.		U/	54.
Pyrene (UG/L)		U/	10.		U/	50.		U/	54.
Butylbenzylphthalate (UG/L)		U/	10.		U/	50.		U/	54.
3,3'-Dichlorobenzidine (UG/L)		U/	10.		U/	50.		U/	54.
Benzo(a)anthracene (UG/L)		U/	10.		U/	50.		U/	54.
Chrysene (UG/L)		U/	10.		U/	50.		U/	54.
bis(2-ethylhexyl)phthalate (UG/L)		U/	10.		U/	50.		U/	54.
Di-n-octyl Phthalate (UG/L)		U/	10.		U/	50.		U/	54.
Benzo(b)fluoranthene (UG/L)		U/	10.		U/	50.		U/	54.
Benzo(k)fluoranthene (UG/L)		U/	10.		U/	50.		U/	54.
Benzo(a)pyrene (UG/L)		U/	10.		U/	50.		U/	54.
Indeno(1,2,3-cd)pyrene (UG/L)		U/	10.		U/	50.		U/	54.
Dibenz(a,h)anthracene (UG/L)		U/	10.		U/	50.		U/	54.
Benzo(g,h,i)perylene (UG/L)		U/	10.		U/	50.		U/	54.
Carbazole (UG/L)		U/	10.		U/	50.		U/	54.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: LEC Type: SVOC

	HD-LCLP06-01 05/13/93			HD-LCLP08-01 05/13/93			HD-LCLP11-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.		U/	130.		U/	26.	
4-Nitrophenol (UG/L)	U/	26.		U/	130.		U/	26.	
Dibenzofuran (UG/L)	U/	10.		U/	52.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	52.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	52.		4.	J/	10.
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	52.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	52.		U/	10.	
4-Nitroaniline (UG/L)	U/	26.		U/	130.		U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.		U/	130.		U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	52.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	52.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	52.		U/	10.	
Pentachlorophenol (UG/L)	U/	26.		U/	130.		U/	26.	
Phenanthrene (UG/L)	U/	10.		U/	52.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	52.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	52.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	52.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	52.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	52.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	52.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	52.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	52.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	52.		42.	/	10.
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	52.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	52.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	52.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	52.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	52.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	52.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	52.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	52.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: SVOC

HD-LCMHE-01 05/13/93

Parameter	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.	
4-Nitrophenol (UG/L)	U/	26.	
Dibenzofuran (UG/L)	U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.	
Diethylphthalate (UG/L)	U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.	
Fluorene (UG/L)	U/	10.	
4-Nitroaniline (UG/L)	U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.	
Hexachlorobenzene (UG/L)	U/	10.	
Pentachlorophenol (UG/L)	U/	26.	
Phenanthrone (UG/L)	U/	10.	
Anthracene (UG/L)	U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.	
Fluoranthene (UG/L)	U/	10.	
Pyrene (UG/L)	U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.	
Chrysene (UG/L)	U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.	
Dibenzo(a,h)anthracene (UG/L)	U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.	
Carbazole (UG/L)	U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-5

LEACHATE PESTICIDES/PCBS

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: PPCB
Generated by: CAW
Date Issued: 21-SEP-93

	HD-LCFB01-01 05/13/93			HD-LCLP01-01 05/13/93			HD-LCLP01-91 05/13/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.056		U/	0.051		U/	0.052
beta-BHC (UG/L)		U/	0.056		U/	0.051		U/	0.052
delta-BHC (UG/L)		U/	0.056		U/	0.051		U/	0.052
gamma-BHC (Lindane) (UG/L)		U/	0.056		U/	0.051		U/	0.052
Heptachlor (UG/L)		U/	0.056		U/	0.051		U/	0.052
Aldrin (UG/L)		U/	0.056		U/	0.051		U/	0.052
Heptachlor epoxide (UG/L)		U/	0.056		U/	0.051		U/	0.052
Endosulfan I (UG/L)		U/	0.056		U/	0.051		U/	0.052
Dieldrin (UG/L)		U/	0.11		U/	0.1		U/	0.1
4,4'-DDE (UG/L)		U/	0.11		U/	0.1		U/	0.1
Endrin (UG/L)		U/	0.11		U/	0.1		U/	0.1
Endosulfan II (UG/L)		U/	0.11		U/	0.1		U/	0.1
4,4'-DDD (UG/L)		U/	0.11		U/	0.1		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.11		U/	0.1		U/	0.1
4,4'-DDT (UG/L)		U/	0.11		U/	0.1		U/	0.1
Methoxychlor (UG/L)		U/	0.56		U/	0.51		U/	0.52
Endrin ketone (UG/L)		U/	0.11		U/	0.1		U/	0.1
alpha-Chlordane (UG/L)		U/	0.056		U/	0.051		U/	0.052
gamma-Chlordane (UG/L)		U/	0.056		U/	0.051		U/	0.052
Toxaphene (UG/L)		U/	5.6		U/	5.1		U/	5.2
Aroclor-1016 (UG/L)		U/	1.1	4.6	P/	1.	6.3	P/	1.
Aroclor-1221 (UG/L)		U/	2.2		U/	2.		U/	2.1
Aroclor-1232 (UG/L)		U/	1.1		U/	1.		U/	1.
Aroclor-1242 (UG/L)		U/	1.1		U/	1.		U/	1.
Aroclor-1248 (UG/L)		U/	1.1		U/	1.		U/	1.
Aroclor-1254 (UG/L)		U/	1.1		U/	1.		U/	1.
Aroclor-1260 (UG/L)		U/	1.1		U/	1.		U/	1.
Endrin aldehyde (UG/L)		U/	0.11		U/	0.1		U/	0.1

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: PPCB

	HD-LCLP06-01 05/13/93			HD-LCLP08-01 05/13/93			HD-LCLP11-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.052		U/	0.051		U/	0.051	
beta-BHC (UG/L)	U/	0.052		U/	0.051		U/	0.051	
delta-BHC (UG/L)	U/	0.052		U/	0.051		U/	0.051	
gamma-BHC (Lindane) (UG/L)	U/	0.052		U/	0.051		U/	0.051	
Heptachlor (UG/L)	U/	0.052		U/	0.051		U/	0.051	
Aldrin (UG/L)	U/	0.052		U/	0.051		U/	0.051	
Heptachlor epoxide (UG/L)	U/	0.052		U/	0.051		U/	0.051	
Endosulfan I (UG/L)	U/	0.052		U/	0.051		U/	0.051	
Dieldrin (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDE (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endrin (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endosulfan II (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDD (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endosulfan sulfate (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDT (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Methoxychlor (UG/L)	U/	0.52		U/	0.51		U/	0.51	
Endrin ketone (UG/L)	U/	0.1		U/	0.1		U/	0.1	
alpha-Chlordane (UG/L)	U/	0.052		U/	0.051		U/	0.051	
gamma-Chlordane (UG/L)	U/	0.052		U/	0.051		U/	0.051	
Toxaphene (UG/L)	U/	5.2		U/	5.1		U/	5.1	
Aroclor-1016 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1221 (UG/L)	U/	2.1		U/	2.		U/	2.	
Aroclor-1232 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1242 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1248 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1254 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1260 (UG/L)	U/	1.		U/	1.		U/	1.	
Endrin aldehyde (UG/L)	U/	0.1		U/	0.1		U/	0.1	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: PPCB

HD-LCMHE-01 05/13/93

Parameter	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.054	
beta-BHC (UG/L)	U/	0.054	
delta-BHC (UG/L)	U/	0.054	
gamma-BHC (Lindane) (UG/L)	U/	0.054	
Heptachlor (UG/L)	U/	0.054	
Aldrin (UG/L)	U/	0.054	
Heptachlor epoxide (UG/L)	U/	0.054	
Endosulfan I (UG/L)	U/	0.054	
Dieldrin (UG/L)	U/	0.11	
4,4'-DDE (UG/L)	U/	0.11	
Endrin (UG/L)	U/	0.11	
Endosulfan II (UG/L)	U/	0.11	
4,4'-DDD (UG/L)	U/	0.11	
Endosulfan sulfate (UG/L)	U/	0.11	
4,4'-DDT (UG/L)	U/	0.11	
Methoxychlor (UG/L)	U/	0.54	
Endrin ketone (UG/L)	U/	0.11	
alpha-Chlordane (UG/L)	U/	0.054	
gamma-Chlordane (UG/L)	U/	0.054	
Toxaphene (UG/L)	U/	5.4	
Aroclor-1016 (UG/L)	U/	1.1	
Aroclor-1221 (UG/L)	U/	2.2	
Aroclor-1232 (UG/L)	U/	1.1	
Aroclor-1242 (UG/L)	U/	1.1	
Aroclor-1248 (UG/L)	U/	1.1	
Aroclor-1254 (UG/L)	U/	1.1	
Aroclor-1260 (UG/L)	U/	1.1	
Endrin aldehyde (UG/L)	U/	0.11	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-6

LEACHATE INDICATORS AND METALS

ANALYTICAL DATA REPORT

HOD Landfill RI/FS

Antioch, Illinois

1

Matrix: LEC Type: IND MTL

Generated by: CAW

Date Issued: 21-SEP-93

	HD-LCFB01-01 05/13/93			HD-LCLP01-01 05/13/93			HD-LCLP01-91 05/13/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)	62.2	B/	39.	57100.	/	39.	222000.	/	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)		U/	3.	31.3	/	3.	32.	M/J	3.
Barium (UG/L)		U/	1.	510.	/	1.	1710.	/	1.
Beryllium (UG/L)		U/	1.	4.	B/	1.	12.5	/	1.
Cadmium (UG/L)		U/	3.	21.3	/	3.	67.9	/	3.
Calcium (UG/L)	6190.	/	12.	448000.	/	12.	1410000.	/	12.
Chromium, total (UG/L)		U/	3.	126.	/	3.	418.	/	3.
Cobalt (UG/L)		U/	4.	52.8	/	4.	185.	/	4.
Copper (UG/L)	5.2	B/	2.	207.	/	2.	755.	/	2.
Iron (UG/L)	22.6	B/	7.	154000.	/	7.	612000.	/	7.
Lead (UG/L)		UN/UJ	2.	241.	/	2.	884.	/	2.
Magnesium (UG/L)	32.9	B/	17.	357000.	/	17.	780000.	/	17.
Manganese (UG/L)	2.7	B/	1.	2260.	/	1.	9020.	/	1.
Mercury (UG/L)		U/UJ	0.1	0.43	/J	0.1	1.8	/	0.1
Nickel (UG/L)		U/	5.	184.	/	5.	560.	/	5.
Potassium (UG/L)		B/U	132.	283000.	/	55.	297000.	/	55.
Selenium (UG/L)		UN/UJ	2.		UN/UJ	10.		UN/UJ	10.
Silver (UG/L)		U/	3.	3.	B/	3.	10.9	/	3.
Sodium (UG/L)	726.	B/	24.	1080000.	/	24.	1040000.	/	24.
Thallium (UG/L)		UN/UJ	2.	2.	BNW/J	2.		UN/UJ	10.
Vanadium (UG/L)		U/	2.	114.	/	2.	386.	/	2.
Zinc (UG/L)	609.	/	6.		/U	2180.	8280.	/	6.
Cyanide (UG/L)		/U	1.8		B/U	19.9		B/U	11.9
Alkalinity, Total (MG/L)		U/	10.	2720.	/	10.	2660.	/	10.
Carbon, Total Organic (MG/L)		U/	1.	32.5	/	1.	30.5	/	1.
Chloride (MG/L)		U/	2.	1310.	/	2.	1330.	/	2.
Hardness (MG/L)		U/	10.	3460.	/	10.	1070.	/	10.
Nitrogen, Ammonia (MG/L)		U/	0.1	214.	/	0.1	223.	/	0.1
Nitrogen, Nitrate (MG/L)		U/	0.02	0.06	/	0.02		U/	0.04
Nitrogen, Nitrite (MG/L)		U/	0.02	0.03	/	0.02	0.05	/	0.02
Total Dissolved Solids (MG/L)		U/	10.	4490.	/	10.	10200.	/	10.
Sulfate (MG/L)		UN/	10.	74.	N/J	10.	74.	N/J	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: IND MTL

	HD-LCLP06-01 05/13/93			HD-LCLP08-01 05/13/93			HD-LCLP11-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)	4770.	/	39.	18000.	/	39.	65900.	/	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)	30.6	/	3.	39.3	/	3.	51.3	/	3.
Barium (UG/L)	257.	/	1.	459.	/	1.	1610.	/	1.
Beryllium (UG/L)	1.2	B/	1.	1.4	B/	1.	4.9	B/	1.
Cadmium (UG/L)	5.8	/	3.	5.6	/	3.	35.4	/	3.
Calcium (UG/L)	204000.	/	12.	119000.	/	12.	550000.	/	12.
Chromium, total (UG/L)	42.1	/	3.	68.	/	3.	174.	/	3.
Cobalt (UG/L)	14.3	B/	4.	38.9	B/	4.	49.9	B/	4.
Copper (UG/L)	33.7	/	2.	63.7	/	2.	378.	/	2.
Iron (UG/L)	24800.	/	7.	43600.	/	7.	257000.	/	7.
Lead (UG/L)	79.8	N/J	2.	104.	N/J	2.	1930.	/	2.
Magnesium (UG/L)	282000.	/	17.	211000.	/	17.	333000.	/	17.
Manganese (UG/L)	816.	/	1.	676.	/	1.	2790.	/	1.
Mercury (UG/L)		U/UJ	0.1	1.3	/	0.1	1.3	/	0.1
Nickel (UG/L)	76.	/	5.	203.	/	5.	172.	/	5.
Potassium (UG/L)	507000.	/	55.	495000.	/	55.	82000.	/	55.
Selenium (UG/L)		UN/UJ	2.		UNN/UJ	2.		UN/UJ	10.
Silver (UG/L)		U/	3.		U/	3.	8.2	B/	3.
Sodium (UG/L)	1140000.	/	24.	1530000.	/	24.	238000.	/	24.
Thallium (UG/L)		UNN/UJ	2.	2.2	BNW/J	2.		UNN/UJ	10.
Vanadium (UG/L)	20.3	B/	2.	45.2	B/	2.	105.	/	2.
Zinc (UG/L)		/U	1740.		/U	1060.		/U	4480.
Cyanide (UG/L)		B/U	4.7		U/	3.1	37.8	/	0.62
Alkalinity, Total (MG/L)	4360.	/	10.	3490.	/	10.	1780.	/	10.
Carbon, Total Organic (MG/L)	36.5	/	1.	36.	/	1.	120.	/	1.
Chloride (MG/L)	1270.	/	2.	2070.	/	2.	196.	/	2.
Hardness (MG/L)	1660.	/	10.	1150.	/	10.	1730.	/	10.
Nitrogen, Ammonia (MG/L)	327.	/	0.1	378.	/	0.1	44.6	/	0.1
Nitrogen, Nitrate (MG/L)		U/	0.02		U/	0.02	0.02	/	0.02
Nitrogen, Nitrite (MG/L)	0.19	/	0.02	0.14	/	0.02	0.07	/	0.02
Total Dissolved Solids (MG/L)	5820.	/	10.	6560.	/	10.	2570.	/	10.
Sulfate (MG/L)	28.	N/J	10.	17.	N/J	10.	530.	N/J	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: LEC Type: IND MTL

HD-LCMHE-01 05/13/93

Parameter	CONC	LQ/DVQ	RDL
Aluminum (UG/L)	151.	B/	39.
Antimony (UG/L)		U/	24.
Arsenic (UG/L)	4.1	B/	3.
Barium (UG/L)	636.	/	1.
Beryllium (UG/L)		U/	1.
Cadmium (UG/L)		U/	3.
Calcium (UG/L)	90300.	/	12.
Chromium, total (UG/L)	9.9	B/	3.
Cobalt (UG/L)	8.1	B/	4.
Copper (UG/L)	9.4	B/U	2.
Iron (UG/L)	7900.	/	7.
Lead (UG/L)	6.2	MN/J	2.
Magnesium (UG/L)	138000.	/	17.
Manganese (UG/L)	76.2	/	1.
Mercury (UG/L)		U/UJ	0.1
Nickel (UG/L)	21.9	B/	5.
Potassium (UG/L)	113000.	/	55.
Selenium (UG/L)		UN/UJ	2.
Silver (UG/L)		U/	3.
Sodium (UG/L)	480000.	/	24.
Thallium (UG/L)	2.	BNW/J	2.
Vanadium (UG/L)	2.4	B/	2.
Zinc (UG/L)		/U	632.
Cyanide (UG/L)		/U	1.4
Alkalinity, Total (MG/L)	1700.	/	10.
Carbon, Total Organic (MG/L)	110.	/	1.
Chloride (MG/L)	823.	/	2.
Hardness (MG/L)	768.	/	10.
Nitrogen, Ammonia (MG/L)	106.	/	0.1
Nitrogen, Nitrate (MG/L)	0.05	/	0.02
Nitrogen, Nitrite (MG/L)		U/	0.02
Total Dissolved Solids (MG/L)	2430.	/	10.
Sulfate (MG/L)	57.	N/J	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-7

LEACHATE TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

1

Matrix: LEC
Generated by: CAW
Date Issued: 21-SEP-93

HD-LCFB01-01 05/13/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	7.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

2

Matrix: LEC

HD-LCLP01-01 05/13/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzenepropanoic acid (UG/L)	840.	J/
Unknown acid (UG/L)	790.	J/
Unknown acid (UG/L)	740.	J/
Unknown acid (UG/L)	310.	J/
Bicyclo[2.2.1]heptan-2-one, (UG/L)	260.	J/
Unknown acid (UG/L)	220.	J/
Unknown (UG/L)	180.	J/
Unknown (UG/L)	140.	J/
Unknown acid (UG/L)	110.	J/
Unknown acid (UG/L)	70.	J/
Unknown acid (UG/L)	61.	J/
Unknown (UG/L)	57.	J/
Unknown (UG/L)	110.	J/
Benzamide, n,n-diethyl-3-met (UG/L)	68.	J/
Unknown acid (UG/L)	66.	J/
Unknown (UG/L)	57.	J/
Unknown (UG/L)	72.	J/
Unknown (UG/L)	70.	J/
Unknown acid (UG/L)	28.	J/
Unknown (UG/L)	27.	J/
Unknown acid (UG/L)	45.	J/
Unknown acid (UG/L)	42.	J/
Unknown (UG/L)	41.	J/
Unknown (UG/L)	37.	J/
2(3H)-Benzothiazolone (UG/L)	48.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	98.	J/
Unknown (UG/L)	63.	J/
Unknown (UG/L)	86.	J/
Unknown (UG/L)	64.	J/
Unknown (UG/L)	57.	J/
Unknown (UG/L)	38.	J/
Unknown (UG/L)	36.	J/
Unknown (UG/L)	25.	J/
Unknown alkane (UG/L)	31.	J/
Unknown (UG/L)	26.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

3

Matrix: LEC

HD-LCLP01-91 05/13/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown acid (UG/L)	1200.	J/
Unknown acid (UG/L)	580.	J/
Unknown acid (UG/L)	520.	J/
Unknown (UG/L)	400.	J/
Bicyclo[2.2.1]heptan-2-one, (UG/L)	400.	J/
Unknown acid (UG/L)	370.	J/
Unknown acid (UG/L)	310.	J/
Unknown (UG/L)	190.	J/
Unknown (UG/L)	150.	J/
Unknown acid (UG/L)	150.	J/
Unknown acid (UG/L)	100.	J/
Unknown acid (UG/L)	82.	J/
Unknown (UG/L)	79.	J/
Unknown (UG/L)	75.	J/
Unknown acid (UG/L)	70.	J/
Unknown (UG/L)	120.	J/
Unknown (UG/L)	110.	J/
Unknown (UG/L)	52.	J/
Benzamide, n,,,-diethyl-3-met (UG/L)	50.	J/
Unknown (UG/L)	45.	J/
Unknown (UG/L)	86.	J/
Unknown (UG/L)	45.	J/
Unknown (UG/L)	44.	J/
Unknown (UG/L)	41.	J/
Unknown (UG/L)	78.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	120.	J/
Unknown (UG/L)	110.	J/
Unknown (UG/L)	57.	J/
Unknown (UG/L)	71.	J/
Unknown (UG/L)	37.	J/
Unknown (UG/L)	50.	J/
Unknown (UG/L)	30.	J/
Unknown (UG/L)	43.	J/
Unknown (UG/L)	35.	J/
Unknown (UG/L)	22.	J/
Unknown (UG/L)	28.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

4

Matrix: LEC

HD-LCLP06-01 05/13/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	59.	J/
Unknown (UG/L)	45.	J/
Bicyclo[2.2.1]heptan-2-one (UG/L)	45.	J/
Unknown (UG/L)	40.	J/
Unknown (UG/L)	32.	J/
Unknown (UG/L)	45.	J/
Benzenepropanoic acid (UG/L)	22.	J/
Aldol condensate (UG/L)	21.	J/
Unknown acid (UG/L)	16.	J/
Unknown (UG/L)	16.	J/
Unknown (UG/L)	16.	J/
Unknown (UG/L)	16.	J/
Unknown acid (UG/L)	15.	J/
Unknown (UG/L)	14.	J/
Unknown (UG/L)	11.	J/
Unknown (UG/L)	11.	J/
Unknown (UG/L)	14.	J/
Unknown alkane (UG/L)	13.	J/
Bicyclo[4.1.0]heptane,3,7,7 (UG/L)	8.7	J/
Unknown alkane (UG/L)	13.	J/
Unknown acid (UG/L)	8.1	J/
Unknown alkane (UG/L)	12.	J/
Unknown alkane (UG/L)	11.	J/
Unknown (UG/L)	7.5	J/
Sulfur, mol. (S8) (UG/L)	11.	J/
Unknown alkane (UG/L)	9.4	J/
Unknown alkane (UG/L)	8.2	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	1100.	J/
Unknown (UG/L)	120.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

5

Matrix: LEC

HD-LCLP08-01 05/13/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	300.	J/
Unknown acid (UG/L)	140.	J/
Unknown (UG/L)	130.	J/
Unknown (UG/L)	100.	J/
Benzamide, n,n-diethyl-3-met (UG/L)	190.	J/
Bicyclo[2.2.1]heptan-2-one, (UG/L)	90.	J/
Unknown (UG/L)	160.	J/
Unknown (UG/L)	39.	J/
Unknown (UG/L)	38.	J/
Unknown acid (UG/L)	65.	J/
Unknown (UG/L)	30.	J/
Unknown (UG/L)	26.	J/
Aldol condensate (UG/L)	25.	J/
Unknown acid (UG/L)	47.	J/
Unknown (UG/L)	19.	J/
Unknown (UG/L)	40.	J/
Unknown (UG/L)	40.	J/
Unknown (UG/L)	42.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

6

Matrix: LEC

HD-LCLP11-01 05/12/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexadecanoic acid (UG/L)	39.	J/
Unknown (UG/L)	55.	J/
Ethanone, 1-phenyl- (UG/L)	43.	J/
Unknown (UG/L)	39.	J/
Cineole (VAN) (UG/L)	38.	J/
Sulfur, mol. (S8) (UG/L)	18.	J/
Unknown (UG/L)	27.	J/
Unknown (UG/L)	25.	J/
Unknown acid (UG/L)	22.	J/
Unknown (UG/L)	21.	J/
Unknown (UG/L)	19.	J/
Unknown (UG/L)	18.	J/
Benzene, propyl- (UG/L)	18.	J/
Unknown (UG/L)	18.	J/
Unknown (UG/L)	11.	J/
Unknown (UG/L)	18.	J/
Unknown (UG/L)	17.	J/
Unknown (UG/L)	11.	J/
Unknown (UG/L)	16.	J/
C9H12 Isomer (UG/L)	15.	J/
Unknown (UG/L)	14.	J/
Unknown (UG/L)	8.2	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown substituted benzene (UG/L)	230.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

7

Matrix: LEC

HD-LCMHE-01 05/13/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	32.	J/
Bicyclo[2.2.1]heptan-2-one, (UG/L)	30.	J/
Unknown (UG/L)	23.	J/
Unknown (UG/L)	20.	J/
Unknown (UG/L)	19.	J/
Unknown (UG/L)	14.	J/
Unknown alkane (UG/L)	13.	J/
Benzamide, n,n-diethyl-3-met (UG/L)	10.	J/
Unknown (UG/L)	13.	J/
Bicyclo[2.2.1]heptan-2-one, (UG/L)	14.	J/
Methane, sulfonylbis- (UG/L)	13.	J/
Aldol condensate (UG/L)	13.	J/
Unknown (UG/L)	14.	J/
Unknown (UG/L)	8.9	J/
Unknown (UG/L)	8.4	J/
Unknown acid (UG/L)	6.8	J/
Unknown (UG/L)	6.2	J/
Unknown (UG/L)	8.4	J/
Unknown (JG/L)	7.5	J/
Unknown (UG/L)	9.1	J/
Unknown (UG/L)	5.7	J/
Unknown (UG/L)	6.8	J/
Unknown (UG/L)	6.6	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	54.	J/
Unknown (UG/L)	43.	J/
Unknown (UG/L)	19.	J/
Unknown (UG/L)	6.	J/
Unknown (UG/L)	4.	J/
Unknown (UG/L)	3.	J/
Unknown (UG/L)	5.	J/

APPENDIX O-8

SURFACE SOILS VOCs

1

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SS Type: VOC
Generated by: CAW
Date Issued: 21-SEP-93

	HD-SU01-01 05/14/93			HD-SU02-01 05/14/93			HD-SU03-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/KG)		U/	62.		U/	14.		U/	13.
Bromomethane (UG/KG)		U/	62.		U/	14.		U/	13.
Vinyl chloride (UG/KG)		U/	62.		U/	14.		U/	13.
Chloroethane (UG/KG)		U/	62.		U/	14.		U/	13.
Methylene chloride (UG/KG)	570.	/	62.	59.	/	14.	48.	B/	13.
Acetone (UG/KG)	140.	/	62.	17.	/	14.	8.	J/	13.
Carbon disulfide (UG/KG)		U/	62.	6.	J/	14.		U/	13.
1,1-Dichloroethene (UG/KG)		U/	62.		U/	14.		U/	13.
1,1-Dichloroethane (UG/KG)		U/	62.		U/	14.		U/	13.
1,2-Dichloroethene (total) (UG/KG)		U/	62.		U/	14.		U/	13.
Chloroform (UG/KG)		U/	62.		U/	14.		U/	13.
1,2-Dichloroethane (UG/KG)		U/	62.		U/	14.		U/	13.
2-Butanone (UG/KG)		U/	62.		U/	14.		U/	13.
1,1,1-Trichloroethane (UG/KG)		U/	62.		U/	14.		U/	13.
Carbon tetrachloride (UG/KG)		U/	62.		U/	14.		U/	13.
Bromodichloromethane (UG/KG)		U/	62.		U/	14.		U/	13.
1,2-Dichloropropane (UG/KG)		U/	62.		U/	14.		U/	13.
cis-1,3-Dichloropropene (UG/KG)		U/	62.		U/	14.		U/	13.
Trichloroethene (UG/KG)		U/	62.		U/	14.		U/	13.
Dibromochloromethane (UG/KG)		U/	62.		U/	14.		U/	13.
1,1,2-Trichloroethane (UG/KG)		U/	62.		U/	14.		U/	13.
Benzene (UG/KG)	7.	J/	62.		U/	14.		U/	13.
trans-1,3-Dichloropropene (UG/KG)		U/	62.		U/	14.		U/	13.
Bromoform (UG/KG)		U/	62.		U/	14.		U/	13.
4-Methyl-2-pentanone (UG/KG)		U/	62.		U/	14.		U/	13.
2-Hexanone (UG/KG)		U/	62.		U/	14.		U/	13.
Tetrachloroethene (UG/KG)		U/	62.		U/	14.		U/	13.
1,1,2,2-Tetrachloroethane (UG/KG)		U/	62.		U/	14.		U/	13.
Toluene (UG/KG)	55.	J/	62.	3.	J/	14.		U/	13.
Chlorobenzene (UG/KG)		U/	62.		U/	14.		U/	13.
Ethylbenzene (UG/KG)	240.	/	62.	12.	J/	14.		U/	13.
Styrene (UG/KG)		U/	62.		U/	14.		U/	13.
Xylenes (total) (UG/KG)	280.	/	62.	37.	/	14.		U/	13.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SS Type: VOC

	HD-SU04-01 05/14/93			HD-SU04-91 05/14/93			HD-SU05-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/KG)		U/	64.		U/	13.		U/	12.
Bromomethane (UG/KG)		U/	64.		U/	13.		U/	12.
Vinyl chloride (UG/KG)		U/	64.		U/	13.		U/	12.
Chloroethane (UG/KG)		U/	64.		U/	13.		U/	12.
Methylene chloride (UG/KG)	1200.	B/	64.	210.	B/	13.	/U	33.	
Acetone (UG/KG)		U/	64.	15.	/	13.		U/	12.
Carbon disulfide (UG/KG)		U/	64.		U/	13.		U/	12.
1,1-Dichloroethene (UG/KG)		U/	64.		U/	13.		U/	12.
1,1-Dichloroethane (UG/KG)		U/	64.		U/	13.		U/	12.
1,2-Dichloroethene (total) (UG/KG)		U/	64.		U/	13.		U/	12.
Chloroform (UG/KG)		U/	64.		U/	13.		U/	12.
1,2-Dichloroethane (UG/KG)		U/	64.		U/	13.		U/	12.
2-Butanone (UG/KG)		U/	64.		U/	13.		U/	12.
1,1,1-Trichloroethane (UG/KG)		U/	64.		U/	13.		U/	12.
Carbon tetrachloride (UG/KG)		U/	64.		U/	13.		U/	12.
Bromodichloromethane (UG/KG)		U/	64.		U/	13.		U/	12.
1,2-Dichloropropane (UG/KG)		U/	64.		U/	13.		U/	12.
cis-1,3-Dichloropropene (UG/KG)		U/	64.		U/	13.		U/	12.
Trichloroethene (UG/KG)		U/	64.		U/	13.		U/	12.
Dibromochloromethane (UG/KG)		U/	64.		U/	13.		U/	12.
1,1,2-Trichloroethane (UG/KG)		U/	64.		U/	13.		U/	12.
Benzene (UG/KG)		U/	64.		U/	13.		U/	12.
trans-1,3-Dichloropropene (UG/KG)		U/	64.		U/	13.		U/	12.
Bromoform (UG/KG)		U/	64.		U/	13.		U/	12.
4-Methyl-2-pentanone (UG/KG)		U/	64.		U/	13.		U/	12.
2-Hexanone (UG/KG)		U/	64.		U/	13.		U/	12.
Tetrachloroethene (UG/KG)		U/	64.		U/	13.		U/	12.
1,1,2,2-Tetrachloroethane (UG/KG)		U/	64.		U/	13.		U/	12.
Toluene (UG/KG)		U/	64.	2.	J/	13.		U/	12.
Chlorobenzene (UG/KG)		U/	64.		U/	13.		U/	12.
Ethylbenzene (UG/KG)		U/	64.		U/	13.		U/	12.
Styrene (UG/KG)		U/	64.		U/	13.		U/	12.
Xylenes (total) (UG/KG)		U/	64.		U/	13.		U/	12.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-9

SURFACE SOILS SVOCs

ANALYTICAL DATA REPORT

HOD Landfill RI/FS

Antioch, Illinois

1

Matrix: SS Type: SVOC

Generated by: CAW

Date Issued: 21-SEP-93

	HD-SU01-01 05/14/93			HD-SU02-01 05/14/93			HD-SU03-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/KG)		U/	410.		U/	420.		U/	430.
bis(2-Chloroethyl) ether (UG/KG)		U/	410.		U/	420.		U/	430.
2-Chlorophenol (UG/KG)		U/	410.		U/	420.		U/	430.
1,3-Dichlorobenzene (UG/KG)		U/	410.		U/	420.		U/	430.
1,4-Dichlorobenzene (UG/KG)	130.	J/	410.		U/	420.		U/	430.
1,2-Dichlorobenzene (UG/KG)		U/	410.		U/	420.		U/	430.
2-Methylphenol (UG/KG)		U/	410.		U/	420.		U/	430.
bis(2-Chloroisopropyl)ether (UG/KG)		U/	410.		U/	420.		U/	430.
4-Methylphenol (UG/KG)		U/	410.		U/	420.		U/	430.
N-Nitroso-di-n-propylamine (UG/KG)		U/	410.		U/	420.		U/	430.
Hexachloroethane (UG/KG)		U/	410.		U/	420.		U/	430.
Nitrobenzene (UG/KG)		U/	410.		U/	420.		U/	430.
Isophorone (UG/KG)		U/	410.		U/	420.		U/	430.
2-Nitrophenol (UG/KG)		U/	410.		U/	420.		U/	430.
2,4-Dimethylphenol (UG/KG)		U/	410.		U/	420.		U/	430.
bis(2-Chloroethoxy)methane (UG/KG)		U/	410.		U/	420.		U/	430.
2,4-Dichlorophenol (UG/KG)		U/	410.		U/	420.		U/	430.
1,2,4-Trichlorobenzene (UG/KG)		U/	410.		U/	420.		U/	430.
Naphthalene (UG/KG)	320.	J/	410.	630.	/	420.		U/	430.
4-Chloroaniline (UG/KG)		U/	410.		U/	420.		U/	430.
Hexachlorobutadiene (UG/KG)		U/	410.		U/	420.		U/	430.
4-Chloro-3-methylphenol (UG/KG)		U/	410.		U/	420.		U/	430.
2-Methylnaphthalene (UG/KG)	61.	J/	410.	390.	J/	420.		U/	430.
Hexachlorocyclopentadiene (UG/KG)		U/	410.		U/	420.		U/	430.
2,4,6-Trichlorophenol (UG/KG)		U/	410.		U/	420.		U/	430.
2,4,5-Trichlorophenol (UG/KG)		U/	990.		U/	1000.		U/	1100.
2-Chloronaphthalene (UG/KG)		U/	410.		U/	420.		U/	430.
2-Nitroaniline (UG/KG)		U/	990.		U/	1000.		U/	1100.
Dimethylphthalate (UG/KG)		U/	410.		U/	420.		U/	430.
Acenaphthylene (UG/KG)		U/	410.		U/	420.		U/	430.
2,6-Dinitrotoluene (UG/KG)		U/	410.		U/	420.		U/	430.
3-Nitroaniline (UG/KG)		U/	990.		U/	1000.		U/	1100.
Acenaphthene (UG/KG)	120.	J/	410.	1000.	/	420.		U/	430.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SS Type: SVOC

	HD-SU04-01 05/14/93			HD-SU04-91 05/14/93			HD-SU05-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/KG)	U/	420.		U/	430.		U/	410.	
bis(2-Chloroethyl) ether (UG/KG)	U/	420.		U/	430.		U/	410.	
2-Chlorophenol (UG/KG)	U/	420.		U/	430.		U/	410.	
1,3-Dichlorobenzene (UG/KG)	U/	420.		U/	430.		U/	410.	
1,4-Dichlorobenzene (UG/KG)	U/	420.		U/	430.		U/	410.	
1,2-Dichlorobenzene (UG/KG)	U/	420.		U/	430.		U/	410.	
2-Methylphenol (UG/KG)	U/	420.		U/	430.		U/	410.	
bis(2-Chloroisopropyl)ether (UG/KG)	U/	420.		U/	430.		U/	410.	
4-Methylphenol (UG/KG)	U/	420.		U/	430.		U/	410.	
N-Nitroso-di-n-propylamine (UG/KG)	U/	420.		U/	430.		U/	410.	
Hexachloroethane (UG/KG)	U/	420.		U/	430.		U/	410.	
Nitrobenzene (UG/KG)	U/	420.		U/	430.		U/	410.	
Isophorone (UG/KG)	U/	420.		U/	430.		U/	410.	
2-Nitrophenol (UG/KG)	U/	420.		U/	430.		U/	410.	
2,4-Dimethylphenol (UG/KG)	U/	420.		U/	430.		U/	410.	
bis(2-Chloroethoxy)methane (UG/KG)	U/	420.		U/	430.		U/	410.	
2,4-Dichlorophenol (UG/KG)	U/	420.		U/	430.		U/	410.	
1,2,4-Trichlorobenzene (UG/KG)	U/	420.		U/	430.		U/	410.	
Naphthalene (UG/KG)	U/	420.		U/	430.		U/	410.	
4-Chloroaniline (UG/KG)	U/	420.		U/	430.		U/	410.	
Hexachlorobutadiene (UG/KG)	U/	420.		U/	430.		U/	410.	
4-Chloro-3-methylphenol (UG/KG)	U/	420.		U/	430.		U/	410.	
2-Methylnaphthalene (UG/KG)	U/	420.		U/	430.		U/	410.	
Hexachlorocyclopentadiene (UG/KG)	U/	420.		U/	430.		U/	410.	
2,4,6-Trichlorophenol (UG/KG)	U/	420.		U/	430.		U/	410.	
2,4,5-Trichlorophenol (UG/KG)	U/	1000.		U/	1100.		U/	990.	
2-Chloronaphthalene (UG/KG)	U/	420.		U/	430.		U/	410.	
2-Nitroaniline (UG/KG)	U/	1000.		U/	1100.		U/	990.	
Dimethylphthalate (UG/KG)	U/	420.		U/	430.		U/	410.	
Acenaphthylene (UG/KG)	U/	420.		U/	430.		U/	410.	
2,6-Dinitrotoluene (UG/KG)	U/	420.		U/	430.		U/	410.	
3-Nitroaniline (UG/KG)	U/	1000.		U/	1100.		U/	990.	
Acenaphthene (UG/KG)	U/	420.		U/	430.		U/	410.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SS Type: SVOC

	HD-SU01-01 05/14/93			HD-SU02-01 05/14/93			HD-SU03-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/KG)		U/	990.		U/	1000.		U/	1100.
4-Nitrophenol (UG/KG)		U/	990.		U/	1000.		U/	1100.
Dibenzofuran (UG/KG)	59.	J/	410.	620.	/	420.		U/	430.
2,4-Dinitrotoluene (UG/KG)		U/	410.		U/	420.		U/	430.
Diethylphthalate (UG/KG)		U/	410.		U/	420.		U/	430.
4-Chlorophenyl-phenylether (UG/KG)		U/	410.		U/	420.		U/	430.
Fluorene (UG/KG)	68.	J/	410.	500.	/	420.		U/	430.
4-Nitroaniline (UG/KG)		U/	990.		U/	1000.		U/	1100.
4,6-Dinitro-2-methylphenol (UG/KG)		U/	990.		U/	1000.		U/	1100.
N-nitrosodiphenylamine (UG/KG)		U/	410.		U/	420.		U/	430.
4-Bromophenyl-phenylether (UG/KG)		U/	410.		U/	420.		U/	430.
Hexachlorobenzene (UG/KG)		U/	410.		U/	420.		U/	430.
Pentachlorophenol (UG/KG)		U/	990.		U/	1000.		U/	1100.
Phenanthrene (UG/KG)	250.	J/	410.	240.	J/	420.	120.	J/	440.
Anthracene (UG/KG)	46.	J/	410.		U/	420.		U/	430.
Di-n-butylphthalate (UG/KG)		U/	410.		U/	420.		U/	440.
Fluoranthene (UG/KG)	110.	J/	410.		U/	420.	160.	J/	440.
Pyrene (UG/KG)	77.	J/	410.		U/	420.	110.	J/	440.
Butylbenzylphthalate (UG/KG)		U/	410.		U/	420.		U/	430.
3,3'-Dichlorobenzidine (UG/KG)		U/	410.		U/	420.		U/	430.
Benzo(a)anthracene (UG/KG)		U/	410.		U/	420.		U/	430.
Chrysene (UG/KG)		U/	410.		U/	420.		U/	430.
bis(2-ethylhexyl)phthalate (UG/KG)	160.	J/	410.	320.	J/	430.	280.	J/	440.
Di-n-octyl Phthalate (UG/KG)		U/	410.		U/	420.		U/	430.
Benzo(b)fluoranthene (UG/KG)		U/	410.		U/	420.	110.	J/	440.
Benzo(k)fluoranthene (UG/KG)		U/	410.		U/	420.		U/	430.
Benzo(a)pyrene (UG/KG)		U/	410.		U/	420.		U/	430.
Indeno(1,2,3-cd)pyrene (UG/KG)		U/	410.		U/	420.		U/	430.
Dibenz(a,h)anthracene (UG/KG)		U/	410.		U/	420.		U/	430.
Benzo(g,h,i)perylene (UG/KG)		U/	410.		U/	420.		U/	430.
Carbazole (UG/KG)	130.	J/	410.		U/	420.		U/	430.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

4

Matrix: SS Type: SVOC

	HD-SU04-01 05/14/93			HD-SU04-91 05/14/93			HD-SU05-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/KG)		U/	1000.		U/	1100.		U/	990.
4-Nitrophenol (UG/KG)		U/	1000.		U/	1100.		U/	990.
Dibenzofuran (UG/KG)		U/	420.		U/	430.		U/	410.
2,4-Dinitrotoluene (UG/KG)		U/	420.		U/	430.		U/	410.
Diethylphthalate (UG/KG)		U/	420.		U/	430.		U/	410.
4-Chlorophenyl-phenylether (UG/KG)		U/	420.		U/	430.		U/	410.
Fluorene (UG/KG)		U/	420.		U/	430.		U/	410.
4-Nitroaniline (UG/KG)		U/	1000.		U/	1100.		U/	990.
4,6-Dinitro-2-methylphenol (UG/KG)		U/	1000.		U/	1100.		U/	990.
N-nitrosodiphenylamine (UG/KG)		U/	420.		U/	430.		U/	410.
4-Bromophenyl-phenylether (UG/KG)		U/	420.		U/	430.		U/	410.
Hexachlorobenzene (UG/KG)		U/	420.		U/	430.		U/	410.
Pentachlorophenol (UG/KG)		U/	1000.		U/	1100.		U/	990.
Phenanthrene (UG/KG)	36.	J/	420.		U/	430.	51.	J/	410.
Anthracene (UG/KG)		U/	420.		U/	430.		U/	410.
Di-n-butylphthalate (UG/KG)		U/	420.		U/	430.		U/	410.
Fluoranthene (UG/KG)	59.	J/	420.		U/	430.	73.	J/	410.
Pyrene (UG/KG)	52.	J/	420.		U/	430.	54.	J/	410.
Butylbenzylphthalate (UG/KG)		U/	420.		U/	430.		U/	410.
3,3'-Dichlorobenzidine (UG/KG)		U/	420.		U/	430.		U/	410.
Benzo(a)anthracene (UG/KG)		U/	420.		U/	430.		U/	410.
Chrysene (UG/KG)		U/	420.		U/	430.		U/	410.
bis(2-ethylhexyl)phthalate (UG/KG)	3500.	D/	420.	3600.	D/	430.	9600.	D/	410.
Di-n-octyl Phthalate (UG/KG)		U/	420.		U/	430.		U/	410.
Benzo(b)fluoranthene (UG/KG)		U/	420.		U/	430.		U/	410.
Benzo(k)fluoranthene (UG/KG)		U/	420.		U/	430.		U/	410.
Benzo(a)pyrene (UG/KG)		U/	420.		U/	430.		U/	410.
Indeno(1,2,3-cd)pyrene (UG/KG)		U/	420.		U/	430.		U/	410.
Dibenz(a,h)anthracene (UG/KG)		U/	420.		U/	430.		U/	410.
Benzo(g,h,i)perylene (UG/KG)		U/	420.		U/	430.		U/	410.
Carbazole (UG/KG)		U/	420.		U/	430.		U/	410.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-10

SURFACE SOILS PESTICIDES/PCBS

ANALYTICAL DATA REPORT

HOD Landfill RI/FS

Antioch, Illinois

1

Matrix: SS Type: PPCB
 Generated by: CAW
 Date Issued: 21-SEP-93

	HD-SU01-01 05/14/93			HD-SU02-01 05/14/93			HD-SU03-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)		U/	2.1		U/	2.3		U/	2.2
beta-BHC (UG/KG)		U/	2.1		U/	2.3		U/	2.2
delta-BHC (UG/KG)		U/	2.1		U/	2.3		U/	2.2
gamma-BHC (Lindane) (UG/KG)		U/	2.1		U/	2.3		U/	2.2
Heptachlor (UG/KG)		U/	2.1		U/	2.3		U/	2.2
Aldrin (UG/KG)		U/	2.1		U/	2.3		U/	2.2
Heptachlor epoxide (UG/KG)		U/	2.1		U/	2.3		U/	2.2
Endosulfan I (UG/KG)		U/	2.1		U/	2.3		U/	2.2
Dieldrin (UG/KG)		U/	4.1		U/	4.5		U/	4.3
4,4'-DDE (UG/KG)		U/	4.1		U/	4.5		U/	4.3
Endrin (UG/KG)		U/	4.1		U/	4.5		U/	4.3
Endosulfan II (UG/KG)		U/	4.1		U/	4.5		U/	4.3
4,4'-DDD (UG/KG)	4.3	/	4.1		U/	4.5		U/	4.3
Endosulfan sulfate (UG/KG)		U/	4.1		U/	4.5		U/	4.3
4,4'-DDT (UG/KG)		U/	4.1		U/	4.5		U/	4.3
Methoxychlor (UG/KG)		U/	21.		U/	23.		U/	22.
Endrin ketone (UG/KG)		U/	4.1		U/	4.5		U/	4.3
alpha-Chlordane (UG/KG)		U/	2.1		U/	2.3		U/	2.2
gamma-Chlordane (UG/KG)		U/	2.1		U/	2.3		U/	2.2
Toxaphene (UG/KG)		U/	210.		U/	230.		U/	220.
Aroclor-1016 (UG/KG)		U/	41.		U/	45.		U/	43.
Aroclor-1221 (UG/KG)		U/	83.		U/	91.		U/	88.
Aroclor-1232 (UG/KG)		U/	41.		U/	45.		U/	43.
Aroclor-1242 (UG/KG)		U/	41.		U/	45.		U/	43.
Aroclor-1248 (UG/KG)		U/	41.		U/	45.		U/	43.
Aroclor-1254 (UG/KG)		U/	41.		U/	45.		U/	43.
Aroclor-1260 (UG/KG)		U/	41.		U/	45.		U/	43.
Endrin aldehyde (UG/KG)		U/	4.1		U/	4.5		U/	4.3

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SS Type: PPCB

	HD-SU04-01 05/14/93			HD-SU04-91 05/14/93			HD-SU05-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
beta-BHC (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
delta-BHC (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
gamma-BHC (Lindane) (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
Heptachlor (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
Aldrin (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
Heptachlor epoxide (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
Endosulfan I (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
Dieldrin (UG/KG)	U/	4.2		U/	4.3		U/	4.1	
4,4'-DDO (UG/KG)	U/	4.2		U/	4.3		U/	4.1	
Endrin (UG/KG)	U/	4.2		U/	4.3		U/	4.1	
Endosulfan II (UG/KG)	U/	4.2		U/	4.3		U/	4.1	
4,4'-DDD (UG/KG)	U/	4.2		U/	4.3		U/	4.1	
Endosulfan sulfate (UG/KG)	U/	4.2		U/	4.3		U/	4.1	
4,4'-DDT (UG/KG)	U/	4.2		U/	4.3		U/	4.1	
Methoxychlor (UG/KG)	U/	22.		U/	22.		U/	21.	
Endrin ketone (UG/KG)	U/	4.2		U/	4.3		U/	4.1	
alpha-Chlordane (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
gamma-Chlordane (UG/KG)	U/	2.2		U/	2.2		U/	2.1	
Toxaphene (UG/KG)	U/	220.		U/	220.		U/	210.	
Aroclor-1016 (UG/KG)	U/	42.		U/	43.		U/	41.	
Aroclor-1221 (UG/KG)	U/	86.		U/	88.		U/	83.	
Aroclor-1232 (UG/KG)	U/	42.		U/	43.		U/	41.	
Aroclor-1242 (UG/KG)	U/	42.		U/	43.		U/	41.	
Aroclor-1248 (UG/KG)	U/	42.		U/	43.		U/	41.	
Aroclor-1254 (UG/KG)	U/	42.		U/	43.		U/	41.	
Aroclor-1260 (UG/KG)	U/	42.		U/	43.		U/	41.	
Endrin aldehyde (UG/KG)	U/	4.2		U/	4.3		U/	4.1	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-11

SURFACE SOILS METALS

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SS Type: SLIND MTL
Generated by: CAW
Date Issued: 21-SEP-93

	HD-SU01-01 05/14/93			HD-SU02-01 05/14/93			HD-SU03-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Total Solids (%)	81.3	/	0.1	74.1	/	0.1	75.9	/	0.1
Total Organic Carbon (MG/KG)	29900.	/	100.	13100.	/	100.	47000.	/	100.
Aluminum (MG/KG)	7450.	/	9.6	6260.	/	10.5	6640.	/	10.3
Antimony (MG/KG)		U/	5.9		U/	6.5		U/	6.3
Arsenic (MG/KG)	5.2	/	0.74	1.9	BS/	0.81	4.1	/	0.79
Barium (MG/KG)	32.5	BE/J	0.25	25.1	BE/J	0.27	30.7	BE/J	0.26
Beryllium (MG/KG)	0.66	B/	0.25	0.55	B/	0.27	0.54	B/	0.26
Cadmium (MG/KG)		U/	0.74		U/	0.81	1.	B/	0.79
Calcium (MG/KG)	78500.	/	3.	88200.	/	3.2	62900.	/	3.2
Chromium, total (MG/KG)	14.3	/	0.74	10.4	/	0.81	12.5	/	0.79
Cobalt (MG/KG)	8.6	B/	0.98	4.1	B/J	1.1	6.2	B/	1.1
Copper (MG/KG)	19.6	E/J	0.49	17.6	E/J	0.54	19.	E/J	0.53
Iron (MG/KG)	17600.	/	1.7	9160.	/	1.9	23500.	/	1.8
Lead (MG/KG)	12.7	N/J	0.49	11.5	N/J	0.54	12.4	N/J	0.53
Magnesium (MG/KG)	41000.	/	4.2	31000.	/	4.6	31500.	/	4.5
Manganese (MG/KG)	418.	/	0.25	88.6	/	0.27	367.	/	0.26
Mercury (MG/KG)		U/	0.05		U/	0.05		U/	0.05
Nickel (MG/KG)	19.2	/	1.2	10.5	B/	1.3	15.2	/	1.3
Potassium (MG/KG)	1940.	E/J	13.5	1270.	BE/J	14.8	1720.	E/J	14.5
Selenium (MG/KG)		UWN/UJ	0.49		UWN/UJ	1.1		UWN/UJ	0.53
Silver (MG/KG)		U/	0.74		U/	0.81		U/	0.79
Sodium (MG/KG)	524.	B/	5.9	133.	B/	6.5	155.	B/	6.3
Thallium (MG/KG)	0.57	BW/UJ	0.49		U/	0.54		BW/UJ	0.79
Vanadium (MG/KG)	18.6	/	0.49	15.1	/	0.54	19.4	/	0.53
Zinc (MG/KG)	45.3	E/J	1.5	46.2	E/J	1.6	48.2	E/J	1.6
Cyanide (MG/KG)		U/	0.31		U/	0.34		U/	0.33

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SS Type: SLIND MTL

	HD-SU04-01 05/14/93			HD-SU04-91 05/14/93			HD-SU05-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Total Solids (%)	77.6	/	0.1	76.1	/	0.1	81.3	/	0.1
Total Organic Carbon (MG/KG)	6830.	/	100.	17100.	/	100.	34500.	/	100.
Aluminum (MG/KG)	8740.	/	10.1	8740.	/	10.2	8450.	/	9.6
Antimony (MG/KG)		U/	6.2		U/	6.3		U/	5.9
Arsenic (MG/KG)	2.2	BS/	0.77	3.3	/	0.79	4.4	/	0.74
Barium (MG/KG)	50.	BE/J	0.26	57.	E/J	0.26	40.4	BE/J	0.25
Beryllium (MG/KG)	0.5	B/	0.26	0.55	B/	0.26	0.74	B/	0.25
Cadmium (MG/KG)		U/	0.77		U/	0.79	1.3	/	0.74
Calcium (MG/KG)	22400.	/	3.1	21300.	/	3.2	79100.	/	3.
Chromium, total (MG/KG)	15.6	/	0.77	15.4	/	0.79	16.1	/	0.74
Cobalt (MG/KG)	8.6	B/	1.	13.4	/	1.1	10.8	B/	0.98
Copper (MG/KG)	15.1	E/J	0.52	15.2	E/J	0.53	25.8	E/J	0.49
Iron (MG/KG)	17500.	/	1.8	18200.	/	1.8	22100.	/	1.7
Lead (MG/KG)	10.5	N/J	0.52	13.4	N/J	0.53	13.7	N/J	0.49
Magnesium (MG/KG)	11000.	/	4.4	11500.	/	4.5	40800.	/	4.2
Manganese (MG/KG)	502.	/	0.26	984.	/	0.26	623.	/	0.25
Mercury (MG/KG)		U/	0.05		U/	0.05		U/	0.05
Nickel (MG/KG)	15.8	/	1.3	16.1	/	1.3	23.	/	1.2
Potassium (MG/KG)	1200.	BE/J	14.2	1230.	BE/J	14.4	1760.	E/J	13.5
Selenium (MG/KG)		UN/UJ	0.52		UN/UJ	0.53		UN/UJ	0.49
Silver (MG/KG)		U/	0.77		U/	0.79		U/	0.74
Sodium (MG/KG)	64.3	B/	6.2	68.4	B/	6.3	175.	B/	5.9
Thallium (MG/KG)		U/	0.52		UN/UJ	0.53	0.79	BU/UJ	0.49
Vanadium (MG/KG)	26.	/	0.52	27.8	/	0.52	24.6	/	0.49
Zinc (MG/KG)	43.9	E/J	1.5	43.5	E/J	1.6	74.8	E/J	1.5
Cyanide (MG/KG)		U/	0.32		U/	0.33		U/	0.31

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-12

SURFACE SOILS TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

1

Matrix: SS
Generated by: CAW
Date Issued: 21-SEP-93

HD-SU01-01 05/14/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	3300.	J/
Unknown (UG/KG)	2300.	J/
Unknown (UG/KG)	1400.	J/
Unknown (UG/KG)	1200.	J/
Unknown alkane (UG/KG)	1300.	J/
Unknown alkane (UG/KG)	680.	J/
Unknown alkane (UG/KG)	370.	J/
Unknown alkane (UG/KG)	660.	J/
Unknown (UG/KG)	1000.	J/
Unknown alkane (UG/KG)	600.	J/
Unknown alkane (UG/KG)	540.	J/
Unknown (UG/KG)	790.	J/
Unknown alkane (UG/KG)	770.	J/
C10H14 Isomer (UG/KG)	530.	J/
Sulfur, mol. (S8) (UG/KG)	670.	J/
Unknown alkane (UG/KG)	390.	J/
Unknown alkane (UG/KG)	650.	J/
Unknown alkane (UG/KG)	370.	J/
Unknown alkane (UG/KG)	610.	J/
Unknown alkane (UG/KG)	440.	J/
Unknown (UG/KG)	490.	J/
Unknown alkane (UG/KG)	470.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	150.	J/
Unknown (UG/KG)	44.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

2

Matrix: SS

HD-SU02-01 05/14/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	3000.	J/
Unknown (UG/KG)	1900.	J/
Hexadecanoic acid (UG/KG)	1800.	J/
Unknown acid (UG/KG)	1300.	J/
Unknown (UG/KG)	1200.	J/
Unknown (UG/KG)	1500.	J/
Unknown (UG/KG)	1100.	J/
Unknown alkane (UG/KG)	1100.	J/
Unknown alkane (UG/KG)	490.	J/
Unknown (UG/KG)	960.	J/
Bicyclo[2.2.1]heptan-2-one (UG/KG)	490.	J/
Unknown alkane (UG/KG)	410.	J/
Unknown alkane (UG/KG)	780.	J/
Unknown (UG/KG)	780.	J/
Unknown alkane (UG/KG)	530.	J/
Unknown alkane (UG/KG)	360.	J/
Unknown alkane (UG/KG)	360.	J/
Unknown alkane (UG/KG)	370.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	21.	J/
Unknown (UG/KG)	11.	J/
Unknown (UG/KG)	4.	J/
Unknown (UG/KG)	4.	J/
Unknown (UG/KG)	4.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS

3

HOD Landfill RI/FS
Antioch, Illinois

Matrix: SS

HD-SU03-01 05/14/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	2700.	J/
Unknown (UG/KG)	1800.	J/
Unknown (UG/KG)	1200.	J/
Unknown alkane (UG/KG)	690.	J/
Unknown (UG/KG)	1100.	J/
Unknown alkane (UG/KG)	1100.	J/
Unknown alkane (UG/KG)	600.	J/
Unknown alkane (UG/KG)	740.	J/
Unknown alkane (UG/KG)	530.	J/
Unknown alkane (UG/KG)	510.	J/
Unknown (UG/KG)	830.	J/
Unknown alkane (UG/KG)	730.	J/
Hexadecanoic acid (UG/KG)	710.	J/
Unknown (UG/KG)	610.	J/
Unknown (UG/KG)	460.	J/
Unknown alkane (UG/KG)	350.	J/
Unknown alkane (UG/KG)	550.	J/
Unknown alkane (UG/KG)	530.	J/
Unknown acid (UG/KG)	490.	J/
Unknown (UG/KG)	360.	J/
Unknown (UG/KG)	360.	J/
Unknown (UG/KG)	450.	J/

HD-SU04-01 05/14/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	2900.	J/
Unknown (UG/KG)	2100.	J/
Unknown (UG/KG)	1200.	J/
Unknown (UG/KG)	1200.	J/
Unknown (UG/KG)	830.	J/
Unknown (UG/KG)	660.	J/
C15H24 Isomer (UG/KG)	430.	J/
Unknown alkane (UG/KG)	380.	J/
Unknown alkane (UG/KG)	550.	J/
Unknown (UG/KG)	470.	J/
Unknown (UG/KG)	430.	J/
Unknown (UG/KG)	350.	J/
Unknown acid (UG/KG)	370.	J/
Unknown alkane (UG/KG)	250.	J/
Unknown alkane (UG/KG)	340.	J/
Unknown alkane (UG/KG)	200.	J/
Unknown alkane (UG/KG)	200.	J/
Unknown (UG/KG)	260.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

4

Matrix: SS

HD-SU04-91 05/14/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	3000.	J/
Unknown (UG/KG)	2000.	J/
Unknown (UG/KG)	1200.	J/
Unknown (UG/KG)	1200.	J/
Unknown (UG/KG)	810.	J/
Unknown (UG/KG)	420.	J/
Unknown (UG/KG)	680.	J/
Unknown alkane (UG/KG)	380.	J/
Unknown alkane (UG/KG)	550.	J/
Unknown (UG/KG)	440.	J/
Unknown (UG/KG)	410.	J/
Unknown alkane (UG/KG)	230.	J/
Unknown alkane (UG/KG)	360.	J/
Unknown (UG/KG)	310.	J/
Unknown alkane (UG/KG)	180.	J/
Unknown alkane (UG/KG)	170.	J/
Unknown alkane (UG/KG)	170.	J/
Unknown (UG/KG)	190.	J/
Unknown alkane (UG/KG)	260.	J/
Unknown (UG/KG)	240.	J/

HD-SU05-01 05/14/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	2800.	J/
Unknown (UG/KG)	1800.	J/
Unknown (UG/KG)	1200.	J/
Unknown (UG/KG)	1100.	J/
Unknown alkane (UG/KG)	990.	J/
Unknown (UG/KG)	840.	J/
Unknown (UG/KG)	460.	J/
Unknown alkane (UG/KG)	400.	J/
Unknown alkane (UG/KG)	700.	J/
Unknown alkane (UG/KG)	380.	J/
Unknown (UG/KG)	490.	J/
Unknown (UG/KG)	650.	J/
Unknown alkane (UG/KG)	360.	J/
Hexadecanoic acid (UG/KG)	550.	J/
Unknown (UG/KG)	390.	J/
Unknown acid (UG/KG)	530.	J/
Unknown (UG/KG)	360.	J/
Unknown alkane (UG/KG)	260.	J/
Unknown alkane (UG/KG)	440.	J/
Unknown (UG/KG)	320.	J/
Unknown alkane (UG/KG)	440.	J/

APPENDIX O-13

GROUNDWATER VOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-GWFB01-01 05/11/93			HD-GWFB02-01 05/12/93			HD-GWFB03-01 06/01/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)	38.	/	10.	19.	/	10.	7.	J/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.	0.9	J/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	HD-GWG11D-01 05/12/93			HD-GWG11S-01 05/12/93			HD-GWTB01-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		/U	17.	4.	J/	10.	
Carbon disulfide (UG/L)	U/	10.	0.8	J/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	HD-GWTB02-01 05/10/93			HD-GWTB03-01 05/11/93			HD-GWTB04-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)	4.	J/	10.		U/	10.	7.	J/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

4

Matrix: GW Type: VOC

	HD-GWTB05-01 06/01/93			HD-GWUS01D-01 05/11/93			HD-GWUS01S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)	2.	J/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	HD-GWUS03D-01 05/11/93			HD-GWUS03I-01 05/11/93			HD-GWUS03S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)	28.	/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)	11.	/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

HD-GWUS04D-01 05/12/93 HD-GWUS04D-91 05/12/93 HD-GWUS04S-01 05/11/93

Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		35.	/	10.
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	HD-GWUS06D-01 05/12/93			HD-GWUS06I-01 05/11/93			HD-GWUS06S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.	2.	J/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	HD-GWUS06S-91 05/11/93			HD-GWW03D-01 06/01/93			HD-GWW03SB-01 06/01/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		/U	19.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	HD-GWW04S-01 06/01/93			HD-GWW04S-91 06/01/93			HD-GWW05S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		19.	/	10.
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	/U	12.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: GW Type: VOC

	HD-GWW065-01 05/11/93			HD-GWW065-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)	2.	J/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-14

GROUNDWATER SVOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-GWFB01-01 05/11/93			HD-GWFB02-01 05/12/93			HD-GWFB03-01 06/01/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	26.		U/	26.	
2-Choronaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
Acenaphthene (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWG11D-01 05/12/93			HD-GWUS01D-01 05/11/93			HD-GWUS01S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	26.		U/	26.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
Acenaphthene (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWUS03D-01 05/11/93			HD-GWUS03I-01 05/11/93			HD-GWUS03S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	25.		U/	25.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	26.		U/	25.		U/	25.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	26.		U/	25.		U/	25.	
Acenaphthene (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

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Matrix: GW Type: SVOC

Parameter	HD-GWUS04D-01 05/12/93			HD-GWUS04D-91 05/12/93			HD-GWUS04S-01 05/11/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	25.		U/	26.		U/	26.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	25.		U/	26.		U/	26.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	25.		U/	26.		U/	26.	
Acenaphthene (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWUS06D-01 05/12/93			HD-GWUS06I-01 05/11/93			HD-GWUS06S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	25.		U/	26.		U/	26.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	25.		U/	26.		U/	26.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	25.		U/	26.		U/	26.	
Acenaphthene (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWUS06S-91 05/11/93			HD-GWW03D-01 06/01/93			HD-GWW03SB-01 06/01/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	11.		U/	11.		U/	11.	
bis(2-Chloroethyl) ether (UG/L)	U/	11.		U/	11.		U/	11.	
2-Chlorophenol (UG/L)	U/	11.		U/	11.		U/	11.	
1,3-Dichlorobenzene (UG/L)	U/	11.		U/	11.		U/	11.	
1,4-Dichlorobenzene (UG/L)	U/	11.		U/	11.		U/	11.	
1,2-Dichlorobenzene (UG/L)	U/	11.		U/	11.		U/	11.	
2-Methylphenol (UG/L)	U/	11.		U/	11.		U/	11.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	11.		U/	11.		U/	11.	
4-Methylphenol (UG/L)	U/	11.		U/	11.		U/	11.	
N-Nitroso-di-n-propylamine (UG/L)	U/	11.		U/	11.		U/	11.	
Hexachloroethane (UG/L)	U/	11.		U/	11.		U/	11.	
Nitrobenzene (UG/L)	U/	11.		U/	11.		U/	11.	
Isophorone (UG/L)	U/	11.		U/	11.		U/	11.	
2-Nitrophenol (UG/L)	U/	11.		U/	11.		U/	11.	
2,4-Dimethylphenol (UG/L)	U/	11.		U/	11.		U/	11.	
bis(2-Chloroethoxy)methane (UG/L)	U/	11.		U/	11.		U/	11.	
2,4-Dichlorophenol (UG/L)	U/	11.		U/	11.		U/	11.	
1,2,4-Trichlorobenzene (UG/L)	U/	11.		U/	11.		U/	11.	
Naphthalene (UG/L)	U/	11.		U/	11.		U/	11.	
4-Chloroaniline (UG/L)	U/	11.		U/	11.		U/	11.	
Hexachlorobutadiene (UG/L)	U/	11.		U/	11.		U/	11.	
4-Chloro-3-methylphenol (UG/L)	U/	11.		U/	11.		U/	11.	
2-Methylnaphthalene (UG/L)	U/	11.		U/	11.		U/	11.	
Hexachlorocyclopentadiene (UG/L)	U/	11.		U/	11.		U/	11.	
2,4,6-Trichlorophenol (UG/L)	U/	11.		U/	11.		U/	11.	
2,4,5-Trichlorophenol (UG/L)	U/	28.		U/	26.		U/	27.	
2-Chloronaphthalene (UG/L)	U/	11.		U/	11.		U/	11.	
2-Nitroaniline (UG/L)	U/	28.		U/	26.		U/	27.	
Dimethylphthalate (UG/L)	U/	11.		U/	11.		U/	11.	
Acenaphthylene (UG/L)	U/	11.		U/	11.		U/	11.	
2,6-Dinitrotoluene (UG/L)	U/	11.		U/	11.		U/	11.	
3-Nitroaniline (UG/L)	U/	28.		U/	26.		U/	27.	
Acenaphthene (UG/L)	U/	11.		U/	11.		U/	11.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWW04S-01 06/01/93			HD-GWW04S-91 06/01/93			HD-GWW05S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	26.		U/	26.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
Acenaphthene (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWW06S-01 05/11/93			HD-GWW07D-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	25.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	26.		U/	25.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	26.		U/	25.	
Acenaphthene (UG/L)	U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWFB01-01 05/11/93			HD-GWFB02-01 05/12/93			HD-GWFB03-01 06/01/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)		U/	26.		U/	26.		U/	26.
4-Nitrophenol (UG/L)		U/	26.		U/	26.		U/	26.
Dibenzofuran (UG/L)		U/	10.		U/	10.		U/	10.
2,4-Dinitrotoluene (UG/L)		U/	10.		U/	10.		U/	10.
Diethylphthalate (UG/L)		U/	10.		U/	10.		U/	10.
4-Chlorophenyl-phenylether (UG/L)		U/	10.		U/	10.		U/	10.
Fluorene (UG/L)		U/	10.		U/	10.		U/	10.
4-Nitroaniline (UG/L)		U/	26.		U/	26.		U/	26.
4,6-Dinitro-2-methylphenol (UG/L)		U/	26.		U/	26.		U/	26.
N-nitrosodiphenylamine (UG/L)		U/	10.		U/	10.		U/	10.
4-Bromophenyl-phenylether (UG/L)		U/	10.		U/	10.		U/	10.
Hexachlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Pentachlorophenol (UG/L)		U/	26.		U/	26.		U/	26.
Phenanthrene (UG/L)		U/	10.		U/	10.		U/	10.
Anthracene (UG/L)		U/	10.		U/	10.		U/	10.
Di-n-butylphthalate (UG/L)	3.	BJ/	10.	2.	BJ/	10.	3.	BJ/	10.
Fluoranthene (UG/L)		U/	10.		U/	10.		U/	10.
Pyrene (UG/L)		U/	10.		U/	10.		U/	10.
Butylbenzylphthalate (UG/L)		U/	10.		U/	10.		U/	10.
3,3'-Dichlorobenzidine (UG/L)		U/	10.		U/	10.		U/	10.
Benzo(a)anthracene (UG/L)		U/	10.		U/	10.		U/	10.
Chrysene (UG/L)		U/	10.		U/	10.		U/	10.
bis(2-ethylhexyl)phthalate (UG/L)		U/	10.		U/	10.		U/	10.
Di-n-octyl Phthalate (UG/L)		U/	10.		U/	10.		U/	10.
Benzo(b)fluoranthene (UG/L)		U/	10.		U/	10.		U/	10.
Benzo(k)fluoranthene (UG/L)		U/	10.		U/	10.		U/	10.
Benzo(a)pyrene (UG/L)		U/	10.		U/	10.		U/	10.
Indeno(1,2,3-cd)pyrene (UG/L)		U/	10.		U/	10.		U/	10.
Dibenzo(a,h)anthracene (UG/L)		U/	10.		U/	10.		U/	10.
Benzo(g,h,i)perylene (UG/L)		U/	10.		U/	10.		U/	10.
Carbazole (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWG11D-01 05/12/93			HD-GWUSU1D-01 05/11/93			HD-GWUS01S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.		U/	26.		U/	26.	
4-Nitrophenol (UG/L)	U/	26.		U/	26.		U/	26.	
Dibenzofuran (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.		U/	26.		U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	26.		U/	26.		U/	26.	
Phenanthrone (UG/L)	U/	10.		U/	10.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	10.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWUS03D-01 05/11/93			HD-GWUS03I-01 05/11/93			HD-GWUS03S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.		U/	25.		U/	25.	
4-Nitrophenol (UG/L)	U/	26.		U/	25.		U/	25.	
Dibenzofuran (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	26.		U/	25.		U/	25.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.		U/	25.		U/	25.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	26.		U/	25.		U/	25.	
Phenanthrrene (UG/L)	U/	10.		U/	10.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	10.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWUS04D-01 05/12/93			HD-GWUS04D-91 05/12/93			HD-GWUS04S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	25.		U/	26.		U/	26.	
4-Nitrophenol (UG/L)	U/	25.		U/	26.		U/	26.	
Dibenzofuran (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	25.		U/	26.		U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	25.		U/	26.		U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	25.		U/	26.		U/	26.	
Phenanthrene (UG/L)	U/	10.		U/	10.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	10.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWUS06D-01 05/12/93			HD-GWUS06I-01 05/11/93			HD-GWUS06S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	25.		U/	26.		U/	26.	
4-Nitrophenol (UG/L)	U/	25.		U/	26.		U/	26.	
Dibenzofuran (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	25.		U/	26.		U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	25.		U/	26.		U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	25.		U/	26.		U/	26.	
Phenanthrrene (UG/L)	U/	10.		U/	10.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	10.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWUS06S-91 05/11/93			HD-GWW03D-01 06/01/93			HD-GWW03SB-01 06/01/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	28.		U/	26.		U/	27.	
4-Nitrophenol (UG/L)	U/	28.		U/	26.		U/	27.	
Dibenzofuran (UG/L)	U/	11.		U/	11.		U/	11.	
2,4-Dinitrotoluene (UG/L)	U/	11.		U/	11.		U/	11.	
Diethylphthalate (UG/L)	U/	11.		U/	11.		U/	11.	
4-Chlorophenyl-phenylether (UG/L)	U/	11.		U/	11.		U/	11.	
Fluorene (UG/L)	U/	11.		U/	11.		U/	11.	
4-Nitroaniline (UG/L)	U/	28.		U/	26.		U/	27.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	28.		U/	26.		U/	27.	
N-nitrosodiphenylamine (UG/L)	U/	11.		U/	11.		U/	11.	
4-Bromophenyl-phenylether (UG/L)	U/	11.		U/	11.		U/	11.	
Hexachlorobenzene (UG/L)	U/	11.		U/	11.		U/	11.	
Pentachlorophenol (UG/L)	U/	28.		U/	26.		U/	27.	
Phenanthrrene (UG/L)	U/	11.		U/	11.		U/	11.	
Anthracene (UG/L)	U/	11.		U/	11.		U/	11.	
Di-n-butylphthalate (UG/L)	U/	11.		U/	11.		U/	11.	
Fluoranthene (UG/L)	U/	11.		U/	11.		U/	11.	
Pyrene (UG/L)	U/	11.		U/	11.		U/	11.	
Butylbenzylphthalate (UG/L)	U/	11.		U/	11.		U/	11.	
3,3'-Dichlorobenzidine (UG/L)	U/	11.		U/	11.		U/	11.	
Benzo(a)anthracene (UG/L)	U/	11.		U/	11.		U/	11.	
Chrysene (UG/L)	U/	11.		U/	11.		U/	11.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	11.		/U	54.		U/	11.	
Di-n-octyl Phthalate (UG/L)	U/	11.		U/	11.		U/	11.	
Benzo(b)fluoranthene (UG/L)	U/	11.		U/	11.		U/	11.	
Benzo(k)fluoranthene (UG/L)	U/	11.		U/	11.		U/	11.	
Benzo(a)pyrene (UG/L)	U/	11.		U/	11.		U/	11.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	11.		U/	11.		U/	11.	
Dibenz(a,h)anthracene (UG/L)	U/	11.		U/	11.		U/	11.	
Benzo(g,h,i)perylene (UG/L)	U/	11.		U/	11.		U/	11.	
Carbazole (UG/L)	U/	11.		U/	11.		U/	11.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWW04S-01 06/01/93			HD-GWW04S-91 06/01/93			HD-GWW05S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.		U/	26.		U/	26.	
4-Nitrophenol (UG/L)	U/	26.		U/	26.		U/	26.	
Dibenzofuran (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.		U/	26.		U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	26.		U/	26.		U/	26.	
Phenanthere (UG/L)	U/	10.		U/	10.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	10.		/U	11.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibenzo(a,h)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	10.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: GW Type: SVOC

	HD-GWM06S-01 05/11/93			HD-GWM07D-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.		U/	25.	
4-Nitrophenol (UG/L)	U/	26.		U/	25.	
Dibenzofuran (UG/L)	U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	26.		U/	25.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.		U/	25.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	26.		U/	25.	
Phenanthrene (UG/L)	U/	10.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-15

GROUNDWATER PESTICIDES/PCBS

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: PPCB
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-GWFB01-01 05/11/93			HD-GWFB02-01 05/12/93			HD-GWFB03-01 06/01/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.052		U/	0.052		U/	0.056
beta-BHC (UG/L)		U/	0.052		U/	0.052		U/	0.056
delta-BHC (UG/L)		U/	0.052		U/	0.052		U/	0.056
gamma-BHC (Lindane) (UG/L)		U/	0.052		U/	0.052		U/	0.056
Heptachlor (UG/L)		U/	0.052		U/	0.052		U/	0.056
Aldrin (UG/L)		U/	0.052		U/	0.052		U/	0.056
Heptachlor epoxide (UG/L)		U/	0.052		U/	0.052		U/	0.056
Endosulfan I (UG/L)		U/	0.052		U/	0.052		U/	0.056
Dieldrin (UG/L)		U/	0.1		U/	0.1		U/	0.11
4,4'-DDE (UG/L)		U/	0.1		U/	0.1		U/	0.11
Endrin (UG/L)		U/	0.1		U/	0.1		U/	0.11
Endosulfan II (UG/L)		U/	0.1		U/	0.1		U/	0.11
4,4'-DDD (UG/L)		U/	0.1		U/	0.1		U/	0.11
Endosulfan sulfate (UG/L)		U/	0.1		U/	0.1		U/	0.11
4,4'-DDT (UG/L)		U/	0.1		U/	0.1		U/	0.11
Methoxychlor (UG/L)		U/	0.52		U/	0.52		U/	0.56
Endrin ketone (UG/L)		U/	0.1		U/	0.1		U/	0.11
alpha-Chlordane (UG/L)		U/	0.052		U/	0.052		U/	0.056
gamma-Chlordane (UG/L)		U/	0.052		U/	0.052		U/	0.056
Toxaphene (UG/L)		U/	5.2		U/	5.2		U/	5.6
Aroclor-1016 (UG/L)		U/	1.		U/	1.		U/	1.1
Aroclor-1221 (UG/L)		U/	2.1		U/	2.1		U/	2.2
Aroclor-1232 (UG/L)		U/	1.		U/	1.		U/	1.1
Aroclor-1242 (UG/L)		U/	1.		U/	1.		U/	1.1
Aroclor-1248 (UG/L)		U/	1.		U/	1.		U/	1.1
Aroclor-1254 (UG/L)		U/	1.		U/	1.		U/	1.1
Aroclor-1260 (UG/L)		U/	1.		U/	1.		U/	1.1
Endrin aldehyde (UG/L)		U/	0.1		U/	0.1		U/	0.11

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT

HOD Landfill RI/FS

Antioch, Illinois

Matrix: GW Type: PPCB

	HD-GWG11D-01 05/12/93			HD-GWUS01D-01 05/11/93			HD-GWUS01S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.054		U/	0.05		U/	0.05	
beta-BHC (UG/L)	U/	0.054		U/	0.05		U/	0.05	
delta-BHC (UG/L)	U/	0.054		U/	0.05		U/	0.05	
gamma-BHC (lindane) (UG/L)	U/	0.054		U/	0.05		U/	0.05	
Heptachlor (UG/L)	U/	0.054		U/	0.05		U/	0.05	
Aldrin (UG/L)	U/	0.054		U/	0.05		U/	0.05	
Heptachlor epoxide (UG/L)	U/	0.054		U/	0.05		U/	0.05	
Endosulfan I (UG/L)	U/	0.054		U/	0.05		U/	0.05	
Dieldrin (UG/L)	U/	0.11		U/	0.1		U/	0.1	
4,4'-DDE (UG/L)	U/	0.11		U/	0.1		U/	0.1	
Endrin (UG/L)	U/	0.11		U/	0.1		U/	0.1	
Endosulfan II (UG/L)	U/	0.11		U/	0.1		U/	0.1	
4,4'-DDD (UG/L)	U/	0.11		U/	0.1		U/	0.1	
Endosulfan sulfate (UG/L)	U/	0.11		U/	0.1		U/	0.1	
4,4'-DDT (UG/L)	U/	0.11		U/	0.1		U/	0.1	
Methoxychlor (UG/L)	U/	0.54		U/	0.5		U/	0.5	
Endrin ketone (UG/L)	U/	0.11		U/	0.1		U/	0.1	
alpha-Chlordane (UG/L)	U/	0.054		U/	0.05		U/	0.05	
gamma-Chlordane (UG/L)	U/	0.054		U/	0.05		U/	0.05	
Toxaphene (UG/L)	U/	5.4		U/	5.		U/	5.	
Aroclor-1016 (UG/L)	U/	1.1		U/	1.		U/	1.	
Aroclor-1221 (UG/L)	U/	2.2		U/	2.		U/	2.	
Aroclor-1232 (UG/L)	U/	1.1		U/	1.		U/	1.	
Aroclor-1242 (UG/L)	U/	1.1		U/	1.		U/	1.	
Aroclor-1248 (UG/L)	U/	1.1		U/	1.		U/	1.	
Aroclor-1254 (UG/L)	U/	1.1		U/	1.		U/	1.	
Aroclor-1260 (UG/L)	U/	1.1		U/	1.		U/	1.	
Endrin aldehyde (UG/L)	U/	0.11		U/	0.1		U/	0.1	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: PPCB

	HD-GWUS03D-01 05/11/93			HD-GWUS03I-01 05/11/93			HD-GWUS03S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.051		U/	0.051		U/	0.05	
beta-BHC (UG/L)	U/	0.051		U/	0.051		U/	0.05	
delta-BHC (UG/L)	U/	0.051		U/	0.051		U/	0.05	
gamma-BHC (lindane) (UG/L)	U/	0.051		U/	0.051		U/	0.05	
Heptachlor (UG/L)	U/	0.051		U/	0.051		U/	0.05	
Aldrin (UG/L)	U/	0.051		U/	0.051		U/	0.05	
Heptachlor epoxide (UG/L)	U/	0.051		U/	0.051		U/	0.05	
Endosulfan I (UG/L)	U/	0.051		U/	0.051		U/	0.05	
Dieldrin (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDE (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endrin (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endosulfan II (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDD (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endosulfan sulfate (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDT (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Methoxychlor (UG/L)	U/	0.51		U/	0.51		U/	0.5	
Endrin ketone (UG/L)	U/	0.1		U/	0.1		U/	0.1	
alpha-Chlordane (UG/L)	U/	0.051		U/	0.051		U/	0.05	
gamma-Chlordane (UG/L)	U/	0.051		U/	0.051		U/	0.05	
Toxaphene (UG/L)	U/	5.1		U/	5.1		U/	5.	
Aroclor-1016 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1221 (UG/L)	U/	2.		U/	2.		U/	2.	
Aroclor-1232 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1242 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1248 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1254 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1260 (UG/L)	U/	1.		U/	1.		U/	1.	
Endrin aldehyde (UG/L)	U/	0.1		U/	0.1		U/	0.1	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: PPCB

	HD-GWUS04D-01 05/12/93			HD-GWUS04D-91 05/12/93			HD-GWUS04S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.051		U/	0.052		U/	0.052
beta-BHC (UG/L)		U/	0.051		U/	0.052		U/	0.052
delta-BHC (UG/L)		U/	0.051		U/	0.052		U/	0.052
gamma-BHC (Lindane) (UG/L)		U/	0.051		U/	0.052		U/	0.052
Heptachlor (UG/L)		U/	0.051		U/	0.052		U/	0.052
Aldrin (UG/L)		U/	0.051		U/	0.052		U/	0.052
Heptachlor epoxide (UG/L)		U/	0.051		U/	0.052		U/	0.052
Endosulfan I (UG/L)		U/	0.051		U/	0.052		U/	0.052
Dieldrin (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDE (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endrin (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endosulfan II (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDD (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDT (UG/L)		U/	0.1		U/	0.1		U/	0.1
Methoxychlor (UG/L)		U/	0.51		U/	0.52		U/	0.52
Endrin ketone (UG/L)		U/	0.1		U/	0.1		U/	0.1
alpha-Chlordane (UG/L)		U/	0.051		U/	0.052		U/	0.052
gamma-Chlordane (UG/L)		U/	0.051		U/	0.052		U/	0.052
Toxaphene (UG/L)		U/	5.1		U/	5.2		U/	5.2
Aroclor-1016 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1221 (UG/L)		U/	2.		U/	2.1		U/	2.1
Aroclor-1232 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1242 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1248 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1254 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1260 (UG/L)		U/	1.		U/	1.		U/	1.
Endrin aldehyde (UG/L)		U/	0.1		U/	0.1		U/	0.1

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: PPCB

	HD-GWUS06D-01 05/12/93			HD-GWUS06I-01 05/11/93			HD-GWUS06S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.051		U/	0.05		U/	0.051	
beta-BHC (UG/L)	U/	0.051		U/	0.05		U/	0.051	
delta-BHC (UG/L)	U/	0.051		U/	0.05		U/	0.051	
gamma-BHC (Lindane) (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Heptachlor (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Aldrin (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Heptachlor epoxide (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Endosulfan I (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Dieldrin (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDE (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endrin (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endosulfan II (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDD (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endosulfan sulfate (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDT (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Methoxychlor (UG/L)	U/	0.51		U/	0.5		U/	0.51	
Endrin ketone (UG/L)	U/	0.1		U/	0.1		U/	0.1	
alpha-Chlordane (UG/L)	U/	0.051		U/	0.05		U/	0.051	
gamma-Chlordane (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Toxaphene (UG/L)	U/	5.1		U/	5.		U/	5.1	
Aroclor-1016 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1221 (UG/L)	U/	2.		U/	2.		U/	2.	
Aroclor-1232 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1242 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1248 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1254 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1260 (UG/L)	U/	1.		U/	1.		U/	1.	
Endrin aldehyde (UG/L)	U/	0.1		U/	0.1		U/	0.1	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: PPCB

	HD-GWUS06S-91 05/11/93			HD-GWW03D-01 06/01/93			HD-GWW03SB-01 06/01/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.051		U/	0.061		U/	0.052
beta-BHC (UG/L)		U/	0.051		U/	0.061		U/	0.052
delta-BHC (UG/L)		U/	0.051		U/	0.061		U/	0.052
gamma-BHC (Lindane) (UG/L)		U/	0.051		U/	0.061		U/	0.052
Heptachlor (UG/L)		U/	0.051		U/	0.061		U/	0.052
Aldrin (UG/L)		U/	0.051		U/	0.061		U/	0.052
Heptachlor epoxide (UG/L)		U/	0.051		U/	0.061		U/	0.052
Endosulfan I (UG/L)		U/	0.051		U/	0.061		U/	0.052
Dieldrin (UG/L)		U/	0.1		U/	0.12		U/	0.1
4,4'-DDE (UG/L)		U/	0.1		U/	0.12		U/	0.1
Endrin (UG/L)		U/	0.1		U/	0.12		U/	0.1
Endosulfan II (UG/L)		U/	0.1		U/	0.12		U/	0.1
4,4'-DDD (UG/L)		U/	0.1		U/	0.12		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.1		U/	0.12		U/	0.1
4,4'-DDT (UG/L)		U/	0.1		U/	0.12		U/	0.1
Methoxychlor (UG/L)		U/	0.51		U/	0.61		U/	0.52
Endrin ketone (UG/L)		U/	0.1		U/	0.12		U/	0.1
alpha-Chlordane (UG/L)		U/	0.051		U/	0.061		U/	0.052
gamma-Chlordane (UG/L)		U/	0.051		U/	0.061		U/	0.052
Toxaphene (UG/L)		U/	5.1		U/	6.1		U/	5.2
Aroclor-1016 (UG/L)		U/	1.		U/	1.2		U/	1.
Aroclor-1221 (UG/L)		U/	2.		U/	2.4		U/	2.1
Aroclor-1232 (UG/L)		U/	1.		U/	1.2		U/	1.
Aroclor-1242 (UG/L)		U/	1.		U/	1.2		U/	1.
Aroclor-1248 (UG/L)		U/	1.		U/	1.2		U/	1.
Aroclor-1254 (UG/L)		U/	1.		U/	1.2		U/	1.
Aroclor-1260 (UG/L)		U/	1.		U/	1.2		U/	1.
Endrin aldehyde (UG/L)		U/	0.1		U/	0.12		U/	0.1

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: PPCB

	HD-GWW04S-01 06/01/93			HD-GWW04S-91 06/01/93			HD-GWW05S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.051		U/	0.05		U/	0.051	
beta-BHC (UG/L)	U/	0.051		U/	0.05		U/	0.051	
delta-BHC (UG/L)	U/	0.051		U/	0.05		U/	0.051	
gamma-BHC (Lindane) (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Heptachlor (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Aldrin (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Heptachlor epoxide (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Endosulfan I (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Dieldrin (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDE (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endrin (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endosulfan II (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDD (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endosulfan sulfate (UG/L)	U/	0.1		U/	0.1		U/	0.1	
4,4'-DDT (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Methoxychlor (UG/L)	U/	0.51		U/	0.5		U/	0.51	
Endrin ketone (UG/L)	U/	0.1		U/	0.1		U/	0.1	
alpha-Chlordane (UG/L)	U/	0.051		U/	0.05		U/	0.051	
gamma-Chlordane (UG/L)	U/	0.051		U/	0.05		U/	0.051	
Toxaphene (UG/L)	U/	5.1		U/	5.		U/	5.1	
Aroclor-1016 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1221 (UG/L)	U/	2.		U/	2.		U/	2.	
Aroclor-1232 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1242 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1248 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1254 (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1260 (UG/L)	U/	1.		U/	1.		U/	1.	
Endrin aldehyde (UG/L)	U/	0.1		U/	0.1		U/	0.1	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT

HOD Landfill RI/FS

Antioch, Illinois

Matrix: GW Type: PPCB

	HD-GWW06S-01 05/11/93			HD-GWW07D-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.052		U/	0.05
beta-BHC (UG/L)		U/	0.052		U/	0.05
delta-BHC (UG/L)		U/	0.052		U/	0.05
gamma-BHC (Lindane) (UG/L)		U/	0.052		U/	0.05
Heptachlor (UG/L)		U/	0.052		U/	0.05
Aldrin (UG/L)		U/	0.052		U/	0.05
Heptachlor epoxide (UG/L)		U/	0.052		U/	0.05
Endosulfan I (UG/L)		U/	0.052		U/	0.05
Dieldrin (UG/L)		U/	0.1		U/	0.1
4,4'-DDE (UG/L)		U/	0.1		U/	0.1
Endrin (UG/L)		U/	0.1		U/	0.1
Endosulfan II (UG/L)		U/	0.1		U/	0.1
4,4'-DDD (UG/L)		U/	0.1		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.1		U/	0.1
4,4'-DDT (UG/L)		U/	0.1		U/	0.1
Methoxychlor (UG/L)		U/	0.52		U/	0.5
Endrin ketone (UG/L)		U/	0.1		U/	0.1
alpha-Chlordane (UG/L)		U/	0.052		U/	0.05
gamma-Chlordane (UG/L)		U/	0.052		U/	0.05
Toxaphene (UG/L)		U/	5.2		U/	5.
Aroclor-1016 (UG/L)		U/	1.		U/	1.
Aroclor-1221 (UG/L)		U/	2.1		U/	2.
Aroclor-1232 (UG/L)		U/	1.		U/	1.
Aroclor-1242 (UG/L)		U/	1.		U/	1.
Aroclor-1248 (UG/L)		U/	1.		U/	1.
Aroclor-1254 (UG/L)		U/	1.		U/	1.
Aroclor-1260 (UG/L)		U/	1.		U/	1.
Endrin aldehyde (UG/L)		U/	0.1		U/	0.1

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-16

GROUNDWATER INDICATORS AND METALS

APPENDIX O-16

GROUNDWATER INDICATORS AND METALS

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: IND MTL
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-GWFB01-01 05/11/93			HD-GWFB02-01 05/12/93			HD-GWFB03-01 06/01/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)	59.4	B/	39.	59.5	B/	39.		U/	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)		U/	3.		U/	3.		U/	3.
Barium (UG/L)		U/	1.		U/	1.		U/	1.
Beryllium (UG/L)		U/	1.		U/	1.		U/	1.
Cadmium (UG/L)		U/	3.		U/	3.		B/U	3.5
Calcium (UG/L)	4980.	BE/J	12.	5840.	E/J	12.	2610.	B/	12.
Chromium, total (UG/L)		U/	3.		U/	3.		U/	3.
Cobalt (UG/L)		U/	4.		U/	4.		U/	4.
Copper (UG/L)		U/	2.		U/	2.		B/U	6.6
Iron (UG/L)		BE/UJ	19.7		BE/UJ	22.		B/U	19.5
Lead (UG/L)	4.1	/	2.		U/	2.	2.4	B/	2.
Magnesium (UG/L)	51.3	B/	17.	56.9	B/	17.		B/U	234.
Manganese (UG/L)		U/	1.		B/U	1.5		B/U	4.3
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		U/	5.		U/	5.		U/	5.
Potassium (UG/L)		U/	55.		U/	55.		B/U	239.
Selenium (UG/L)		U/	2.		U/	2.		U/	2.
Silver (UG/L)		U/	3.		U/	3.		U/	3.
Sodium (UG/L)		B/U	156.	619.	B/	24.		B/U	520.
Thallium (UG/L)		UW/UJ	2.		U/	2.		UW/UJ	2.
Vanadium (UG/L)		U/	2.		U/	2.		U/	2.
Zinc (UG/L)	594.	E/	6.	678.	E/	6.	241.	/	6.
Cyanide (UG/L)		B/UJ	1.8		B/UJ	0.81		U/	4.
Alkalinity, Total (MG/L)		U/	10.		U/	10.		U/	10.
Carbon, Total Organic (MG/L)		U/	1.		U/	1.		U/	1.
Chloride (MG/L)		U/	2.		U/	2.		U/	2.
Hardness (MG/L)		U/	10.		U/	10.		U/	10.
Nitrogen, Ammonia (MG/L)		U/	0.1		U/	0.1	0.27	/	0.1
Nitrogen, Nitrate (MG/L)		U/	0.02		U/	0.02	0.07	/	0.02
Nitrogen, Nitrite (MG/L)		U/	0.02		U/	0.02		U/	0.02
Total Dissolved Solids (MG/L)		U*/UJ	10.	12.	/	10.	12.	/	10.
Sulfate (MG/L)		UN/	10.		UN/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: IND MTL

	HD-GWG11D-01 05/12/93			HD-GWUS01D-01 05/11/93			HD-GWUS01S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/UJ	39.		U/	39.		U/UJ	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)	3.1	B/	3.		U/	3.		U/	3.
Barium (UG/L)	282.	/	1.	89.8	B/	1.	34.9	B/	1.
Beryllium (UG/L)		U/	1.		U/	1.		U/	1.
Cadmium (UG/L)	5.6	/	3.		U/	3.		U/	3.
Calcium (UG/L)	112000.	E/J	12.	58800.	E/J	12.	83700.	E/J	12.
Chromium, total (UG/L)	3.5	B/	3.		U/	3.		U/	3.
Cobalt (UG/L)		U/	4.		U/	4.		U/	4.
Copper (UG/L)		B/U	8.		B/U	3.1	4.4	B/U	2.
Iron (UG/L)		BE/UJ	64.4	660.	E/J	7.	805.	E/J	7.
Lead (UG/L)		/U	3.8		/U	3.6		B/U	2.8
Magnesium (UG/L)	98600.	/	17.	41700.	/	17.	39200.	/	17.
Manganese (UG/L)	32.	/	1.	58.7	/	1.	261.	/	1.
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		B/U	19.		U/	5.		U/	5.
Potassium (UG/L)	3050.	B/	55.	1150.	B/	55.		B/U	538.
Selenium (UG/L)		U/	2.		UW/UJ	2.		UW/UJ	2.
Silver (UG/L)		U/	3.		U/	3.		U/	3.
Sodium (UG/L)	33700.	/	24.	25400.	/	24.	21300.	/	24.
Thallium (UG/L)	2.1	BW/J	2.		UW/UJ	2.		UW/UJ	2.
Vanadium (UG/L)		U/	2.		U/	2.		U/	2.
Zinc (UG/L)		E/U	2110.		E/U	481.		E/J	420.
Cyanide (UG/L)		B/UJ	4.3		B/UJ	1.1		B/UJ	0.72
Alkalinity, Total (MG/L)			318.		/	10.	310.	/	10.
Carbon, Total Organic (MG/L)			1.3		/	1.	1.2	/	1.
Chloride (MG/L)			22.		/	2.	55.	/	2.
Hardness (MG/L)			346.		/	10.	561.	/	10.
Nitrogen, Ammonia (MG/L)			0.77		/	0.1		U/	0.1
Nitrogen, Nitrate (MG/L)					U/	0.02	0.04	/	0.02
Nitrogen, Nitrite (MG/L)					U/	0.02		U/	0.02
Total Dissolved Solids (MG/L)			412.		*/J	10.	448.	*/J	10.
Sulfate (MG/L)			49.		N/J	10.	39.	N/J	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: IND MTL

	HD-GWUS03D-01 05/11/93			HD-GWUS03I-01 05/11/93			HD-GWUS03S-01 05/10/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/UJ	39.		U/UJ	39.		U/UJ	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)		U/	3.	6.3	B/	3.		U/	3.
Barium (UG/L)	129.	B/	1.	41.1	B/	1.	55.1	B/	1.
Beryllium (UG/L)		U/	1.		U/	1.		U/	1.
Cadmium (UG/L)		U/	3.		U/	3.		U/	3.
Calcium (UG/L)	96500.	E/J	12.	45500.	E/J	12.	79800.	E/J	12.
Chromium, total (UG/L)		U/	3.		U/	3.		U/	3.
Cobalt (UG/L)		U/	4.		U/	4.		U/	4.
Copper (UG/L)		B/U	5.3		B/U	3.3		B/U	4.9
Iron (UG/L)	2400.	E/J	7.		BE/UJ	20.3	1230.	E/J	7.
Lead (UG/L)		B/U	2.6		/U	4.7		U/	2.
Magnesium (UG/L)	46200.	/	17.	34000.	/	17.	29600.	/	17.
Manganese (UG/L)	42.4	/	1.	39.6	/	1.	50.1	/	1.
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		U/	5.		U/	5.		U/	5.
Potassium (UG/L)	2580.	B/	55.	1710.	B/	55.	2990.	B/	55.
Selenium (UG/L)		UW/UJ	2.		U/	2.		UW/UJ	2.
Silver (UG/L)		U/	3.		U/	3.		U/	3.
Sodium (UG/L)	67500.	/	24.	36200.	/	24.	98500.	/	24.
Thallium (UG/L)		UW/UJ	2.		U/	2.		U/	2.
Vanadium (UG/L)		U/	2.		U/	2.		U/	2.
Zinc (UG/L)	474.	E/U	6.		BE/U	10.		E/U	509.
Cyanide (UG/L)		U/UJ	0.62		U/UJ	0.62		U/UJ	0.62
Alkalinity, Total (MG/L)	358.	/	10.	303.	/	10.	380.	/	10.
Carbon, Total Organic (MG/L)		U/	1.		U/	1.	5.9	/	1.
Chloride (MG/L)	144.	/	2.	8.	/	2.	104.	/	2.
Hardness (MG/L)	620.	/	10.	900.	/	10.	1140.	/	10.
Nitrogen, Ammonia (MG/L)		U/	0.1		U/	0.1	1.02	/	0.1
Nitrogen, Nitrate (MG/L)	0.03	/	0.02	0.04	/	0.02	0.14	/	0.02
Nitrogen, Nitrite (MG/L)		U/	0.02		U/	0.02		U/	0.02
Total Dissolved Solids (MG/L)	620.	*J	10.	304.	*J	10.	600.	/	10.
Sulfate (MG/L)	49.	N/J	10.	30.	N/J	10.	40.	N/J	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: IND MTL

	HD-GWUS04D-01 05/12/93			HD-GWUS04D-91 05/12/93			HD-GWUS04S-01 05/11/93			
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	
Aluminum (UG/L)		U/UJ	39.		U/	39.		U/UJ	39.	
Antimony (UG/L)		U/	24.		U/	24.		U/	24.	
Arsenic (UG/L)		U/	3.		U/	3.		U/	3.	
Barium (UG/L)	47.6	B/	1.	59.1	B/	1.	106.	B/	1.	
Beryllium (UG/L)		U/	1.		U/	1.		U/	1.	
Cadmium (UG/L)		U/	3.		U/	3.		U/	3.	
Calcium (UG/L)	40300.	E/J	12.	43200.	E/J	12.	119000.	E/J	12.	
Chromium, total (UG/L)		U/	3.		U/	3.		U/	3.	
Cobalt (UG/L)		U/	4.		U/	4.		U/	4.	
Copper (UG/L)		B/U	5.6		B/U	3.8		B/U	5.8	
Iron (UG/L)		BE/UJ	22.6		225.	E/J	7.	2700.	E/J	7.
Lead (UG/L)		/U	3.9		U/	2.		B/U	2.7	
Magnesium (UG/L)	26500.	/	17.	25300.	/	17.	46700.	/	17.	
Manganese (UG/L)	18.	/	1.	16.	/	1.	72.7	/	1.	
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1	
Nickel (UG/L)		B/U	8.3		U/	5.	9.7	B/U	5.	
Potassium (UG/L)	1810.	B/	55.	1400.	B/	55.	1570.	B/	55.	
Selenium (UG/L)		U/	2.		U/	2.		U/UJ	2.	
Silver (UG/L)		U/	3.		U/	3.		U/	3.	
Sodium (UG/L)	50300.	/	24.	38100.	/	24.	55800.	/	24.	
Thallium (UG/L)		U/	2.		U/	2.		U/UJ	2.	
Vanadium (UG/L)		U/	2.		U/	2.		U/	2.	
Zinc (UG/L)		BE/U	13.2		E/U	554.		E/U	530.	
Cyanide (UG/L)		U/UJ	0.62		B/UJ	1.3		U/UJ	0.62	
Alkalinity, Total (MG/L)	225.	/	10.	227.	/	10.	367.	/	10.	
Carbon, Total Organic (MG/L)		U/	1.	1.2	/	1.	3.1	/	1.	
Chloride (MG/L)	3.	/	2.	3.	/	2.	93.	/	2.	
Hardness (MG/L)	216.	/	10.	222.	/	10.	514.	/	10.	
Nitrogen, Ammonia (MG/L)	0.79	/	0.1	0.74	/	0.1		U/	0.1	
Nitrogen, Nitrate (MG/L)		U/	0.02		U/	0.02	0.02	/	0.02	
Nitrogen, Nitrite (MG/L)		U/	0.02		U/	0.02		U/	0.02	
Total Dissolved Solids (MG/L)	344.	/	10.	344.	/	10.	666.	*/J	10.	
Sulfate (MG/L)	67.	N/J	10.	68.	N/J	10.	133.	N/J	10.	

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: IND MTL

	HD-GWUS06D-01 05/12/93			HD-GWUS06I-01 05/11/93			HD-GWUS06S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/	39.		U/	39.		U/UJ	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)		U/	3.	9.5	B/	3.		U/	3.
Barium (UG/L)	69.	B/	1.	53.6	B/	1.	68.1	B/	1.
Beryllium (UG/L)		U/	1.		U/	1.		U/	1.
Cadmium (UG/L)		U/	3.		U/	3.		U/	3.
Calcium (UG/L)	48200.	E/J	12.	51200.	E/J	12.	105000.	E/J	12.
Chromium, total (UG/L)		U/	3.		U/	3.		U/	3.
Cobalt (UG/L)		U/	4.		U/	4.		U/	4.
Copper (UG/L)		B/U	2.2		B/U	3.1		B/U	6.5
Iron (UG/L)	845.	E/J	7.		BE/UJ	39.1	2530.	E/J	7.
Lead (UG/L)		U/	2.		B/U	2.6		B/U	2.8
Magnesium (UG/L)	24400.	/	17.	43900.	/	17.	44800.	/	17.
Manganese (UG/L)	31.	/	1.	20.3	/	1.	87.7	/	1.
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		U/	5.		B/U	13.		U/	5.
Potassium (UG/L)	1820.	B/	55.	17600.	B/	55.	1290.	B/	55.
Selenium (UG/L)		U/	2.		U/	2.		UW/UJ	2.
Silver (UG/L)		U/	3.		U/	3.		U/	3.
Sodium (UG/L)	49500.	/	24.	33900.	/	24.	17500.	/	24.
Thallium (UG/L)		U/	2.		U/	2.		U/	2.
Vanadium (UG/L)		U/	2.		U/	2.		U/	2.
Zinc (UG/L)		E/U	511.		E/U	560.		BE/U	19.8
Cyanide (UG/L)		B/UJ	1.4		B/UJ	1.8		B/UJ	0.68
Alkalinity, Total (MG/L)	218.	/	10.	328.	/	10.	398.	/	10.
Carbon, Total Organic (MG/L)	5.5	/	1.	2.3	/	1.	5.1	/	1.
Chloride (MG/L)	8.	/	2.	27.	/	2.	44.	/	2.
Hardness (MG/L)	227.	/	10.	416.	/	10.	630.	/	10.
Nitrogen, Ammonia (MG/L)	0.75	/	0.1	0.28	/	0.1		U/	0.1
Nitrogen, Nitrate (MG/L)		U/	0.02		U/	0.02	0.05	/	0.02
Nitrogen, Nitrite (MG/L)		U/	0.02		U/	0.02		U/	0.02
Total Dissolved Solids (MG/L)	372.	/	10.	392.	*J	10.	506.	*J	10.
Sulfate (MG/L)	90.	N/J	10.	32.	N/J	10.	31.	N/J	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

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Matrix: GW Type: IND MTL

	HD-GWUS06S-91 05/11/93			HD-GWW03D-01 06/01/93			HD-GWW03SB-01 06/01/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/UJ	39.		U/	39.		U/	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)		U/	3.		U/	3.		U/	3.
Barium (UG/L)	66.7	B/	1.	163.	B/	1.	95.3	B/	1.
Beryllium (UG/L)		U/	1.		B/U	1.		B/U	1.1
Cadmium (UG/L)		U/	3.		U/	3.		U/	3.
Calcium (UG/L)	105000.	E/J	12.	115000.	/	12.	128000.	/	12.
Chromium, total (UG/L)		U/	3.	4.3	B/	3.		U/	3.
Cobalt (UG/L)		U/	4.		U/	4.		U/	4.
Copper (UG/L)		B/U	6.7		B/U	15.		B/U	11.9
Iron (UG/L)	3200.	E/J	7.	707.	/	7.	1070.	/	7.
Lead (UG/L)		U/	2.		U/	2.		U/	2.
Magnesium (UG/L)	43400.	/	17.	62500.	/	17.	55000.	/	17.
Manganese (UG/L)	84.9	/	1.	141.	/	1.	109.	/	1.
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		U/	5.	5.2	B/	5.	6.	B/	5.
Potassium (UG/L)	1200.	B/	55.	2610.	B/	55.	1750.	B/	55.
Selenium (UG/L)		UW/UJ	2.		UW/UJ	2.		UW/UJ	2.
Silver (UG/L)		U/	3.		U/	3.		U/	3.
Sodium (UG/L)	16800.	/	24.	63200.	/	24.	64300.	/	24.
Thallium (UG/L)		U/	2.		UW/UJ	2.		UW/UJ	2.
Vanadium (UG/L)		U/	2.		U/	2.		U/	2.
Zinc (UG/L)		E/U	558.	314.	/	6.	352.	/	6.
Cyanide (UG/L)		B/UJ	0.7		U/	4.		U/	4.
Alkalinity, Total (MG/L)	399.	/	10.	393.	/	10.	390.	/	10.
Carbon, Total Organic (MG/L)	5.4	/	1.	1.3	/	1.	2.5	/	1.
Chloride (MG/L)	43.	/	2.	153.	/	2.	103.	/	2.
Hardness (MG/L)	551.	/	10.	574.	/	10.	614.	/	10.
Nitrogen, Ammonia (MG/L)		U/	0.1		/U	0.3		U/	0.1
Nitrogen, Nitrate (MG/L)	0.04	/	0.02		/U	0.04		/U	0.04
Nitrogen, Nitrite (MG/L)		U/	0.02		/U	0.02		U/	0.02
Total Dissolved Solids (MG/L)	516.	*/J	10.	788.	/	10.	834.	/	10.
Sulfate (MG/L)	31.	N/J	10.	95.	/	10.	171.	/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: IND MTL

	HD-GWW04S-01 06/01/93			HD-GWW04S-91 06/01/93			HD-GWW05S-01 05/11/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/	39.		U/	39.		U/UJ	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)		U/	3.	4.1	B/	3.		U/	3.
Barium (UG/L)	363.	/	1.	354.	/	1.	182.	B/	1.
Beryllium (UG/L)		B/U	1.4		B/	1.2		U/	1.
Cadmium (UG/L)		B/U	3.4		B/	3.4		U/	3.
Calcium (UG/L)	163000.	/	12.	155000.	/	12.	148000.	E/J	12.
Chromium, total (UG/L)	4.4	B/	3.		U/	3.		U/	3.
Cobalt (UG/L)	9.	B/	4.	4.1	B/	4.		U/	4.
Copper (UG/L)		B/U	17.1		B/U	14.7		B/U	7.6
Iron (UG/L)	238.	/	7.	206.	/	7.	2480.	E/J	7.
Lead (UG/L)		U/	2.		U/	2.		M/UJ	3.2
Magnesium (UG/L)	42500.	/	17.	42400.	/	17.	40200.	/	17.
Manganese (UG/L)	1070.	/	1.	1110.	/	1.	692.	/	1.
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)	8.4	B/	5.		U/	5.		B/U	8.6
Potassium (UG/L)	14000.	/	55.	14100.	/	55.	4250.	B/	55.
Selenium (UG/L)		UW/UJ	2.		UW/UJ	2.		UW/UJ	2.
Silver (UG/L)		U/	3.		U/	3.		U/	3.
Sodium (UG/L)	50900.	/	24.	52500.	/	24.	38900.	/	24.
Thallium (UG/L)		U/	2.		UW/UJ	2.		U/	2.
Vanadium (UG/L)		B/U	7.4		B/U	2.		U/	2.
Zinc (UG/L)	248.	/	6.	333.	/	6.		E/U	686.
Cyanide (UG/L)		U/	4.		U/	4.		B/UJ	0.68
Alkalinity, Total (MG/L)	580.	/	10.	572.	/	10.	518.	/	10.
Carbon, Total Organic (MG/L)	13.	/	1.	10.	/	1.	7.7	/	1.
Chloride (MG/L)	102.	/	2.	101.	/	2.	59.	/	2.
Hardness (MG/L)	1290.	/	10.	1200.	/	10.	798.	/	10.
Nitrogen, Ammonia (MG/L)	14.5	/	0.1	22.8	/	0.1	3.73	/	0.1
Nitrogen, Nitrate (MG/L)		/U	0.08		/U	0.09	0.05	/	0.02
Nitrogen, Nitrite (MG/L)		U/	0.02		U/	0.02		U/	0.02
Total Dissolved Solids (MG/L)	744.	/	10.	756.	/	10.	664.	*J	10.
Sulfate (MG/L)		U/	10.		U/	10.	49.	N/J	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: IND MTL

	HD-GWW06S-01 05/11/93			HD-GWW07D-01 05/12/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/UJ	39.		U/	39.
Antimony (UG/L)		U/	24.		U/	24.
Arsenic (UG/L)		U/	3.		U/	3.
Barium (UG/L)	116.	B/	1.	73.8	B/	1.
Beryllium (UG/L)		U/	1.		U/	1.
Cadmium (UG/L)		U/	3.		U/	3.
Calcium (UG/L)	353000.	E/J	12.	36500.	E/J	12.
Chromium, total (UG/L)	4.4	B/	3.		U/	3.
Cobalt (UG/L)		U/	4.		U/	4.
Copper (UG/L)		B/U	10.7		B/U	2.2
Iron (UG/L)	3600.	E/J	7.		BE/UJ	55.2
Lead (UG/L)		B/U	2.5		B/U	2.4
Magnesium (UG/L)	126000.	/	17.	21800.	/	17.
Manganese (UG/L)	745.	/	1.	53.4	/	1.
Mercury (UG/L)		U/	0.1		U/	0.1
Nickel (UG/L)		U/	5.		B/U	7.3
Potassium (UG/L)	4620.	B/	55.	1580.	B/	55.
Selenium (UG/L)		UW/UJ	10.		U/	2.
Silver (UG/L)		U/	3.		U/	3.
Sodium (UG/L)	24300.	/	24.	57300.	/	24.
Thallium (UG/L)		UW/UJ	2.		U/	2.
Vanadium (UG/L)		U/	2.		U/	2.
Zinc (UG/L)		E/U	562.		BE/U	13.2
Cyanide (UG/L)		B/UJ	0.83		B/UJ	1.1
Alkalinity, Total (MG/L)	640.	/	10.	181.	/	10.
Carbon, Total Organic (MG/L)	8.4	/	1.		U/	1.
Chloride (MG/L)	49.	/	2.	4.	/	2.
Hardness (MG/L)	1800.	/	10.	261.	/	10.
Nitrogen, Ammonia (MG/L)	0.78	/	0.1	0.71	/	0.1
Nitrogen, Nitrate (MG/L)	0.06	/	0.02		U/	0.02
Nitrogen, Nitrite (MG/L)		U/	0.02		U/	0.02
Total Dissolved Solids (MG/L)	1880.	*J	10.	380.	/	10.
Sulfate (MG/L)	790.	N/J	10.	124.	N/J	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-17

GROUNDWATER TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS

1

HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW
Generated by: CAW
Date Issued: 21-SEP-93

HD-GWG11S-01 05/12/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	27.	J/

HD-GWUS03D-01 05/11/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	32.	J/

HD-GWUS03I-01 05/11/93

(TIBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Ethanol, 2-chloro-, phosphate (UG/L)	2.8	J/

HD-GWUS04D-01 05/12/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	32.	J/

HD-GWUS04D-91 05/12/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	6.	J/

HD-GWUS04S-01 05/11/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	21.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

2

Matrix: GW

HD-GWUS06D-01 05/12/93

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzoic acid, 2-[[[4-[(acetyl (UG/L)	2.3	J/

HD-GWUS06S-01 05/11/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	5.	J/

HD-GWW05S-01 05/11/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	38.	J/
Unknown (UG/L)	32.	J/

APPENDIX O-18

PRIVATE WATER SUPPLY VOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-PW01-01 07/01/93			HD-PW02-'91			HD-PW03-01 06/29/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	1.		U/	1.		U/	1.	
Bromomethane (UG/L)	U/	1.		U/	1.		U/	1.	
Vinyl chloride (UG/L)	U/	1.		U/	1.		U/	1.	
Chloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
Methylene chloride (UG/L)	U/	2.		B/U	5.		B/U	5.	
Acetone (UG/L)	U/R	5.		U/R	5.		U/R	5.	
Carbon disulfide (UG/L)	U/	1.		U/	1.		U/	1.	
1,1-Dichloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
1,1-Dichloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
cis-1,2-Dichloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
trans-1,2-Dichloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
Chloroform (UG/L)	/U	1.		U/	1.		U/	1.	
1,2-Dichloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
2-Butanone (UG/L)	U/R	5.		U/R	5.		U/R	5.	
Bromochloromethane (UG/L)	U/	1.		U/	1.		U/	1.	
1,1,1-Trichloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
Carbon tetrachloride (UG/L)	U/	1.		U/	1.		U/	1.	
Bromodichloromethane (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dichloropropane (UG/L)	U/	1.		U/	1.		U/	1.	
cis-1,3-Dichloropropene (UG/L)	U/	1.		U/	1.		U/	1.	
Trichloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
Dibromochloromethane (UG/L)	U/	1.		U/	1.		U/	1.	
1,1,2-Trichloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
Benzene (UG/L)	U/	1.		U/	1.		U/	1.	
trans-1,3-Dichloropropene (UG/L)	U/	1.		U/	1.		U/	1.	
Bromoform (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dibromoethane (UG/L)	U/	1.		U/	1.		U/	1.	
4-Methyl-2-pentanone (UG/L)	U/	5.		U/	5.		U/	5.	
2-Hexanone (UG/L)	U/R	5.		U/R	5.		U/R	5.	
Tetrachloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
Toluene (UG/L)	U/	1.		U/	1.		U/	1.	
Chlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

	HD-PW05-01 06/29/93			HD-PWFB/1-01 06/29/93			HD-PWTB01-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	1.		U/	1.		U/	1.	
Bromomethane (UG/L)	U/	1.		U/	1.		U/	1.	
Vinyl chloride (UG/L)	U/	1.		U/	1.		U/	1.	
Chloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
Methylene chloride (UG/L)	B/U	3.	3.	B/	2.	6.	B/	2.	
Acetone (UG/L)	U/R	5.	6.	/J	5.	4.	J/J	5.	
Carbon disulfide (UG/L)	U/	1.		U/	1.		U/	1.	
1,1-Dichloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
1,1-Dichloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
cis-1,2-Dichloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
trans-1,2-Dichloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
Chloroform (UG/L)	U/	1.	11.	/	1.	11.	/	1.	
1,2-Dichloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
2-Butanone (UG/L)	U/R	5.		U/R	5.		U/R	5.	
Bromochloromethane (UG/L)	U/	1.		U/	1.		U/	1.	
1,1,1-Trichloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
Carbon tetrachloride (UG/L)	U/	1.		U/	1.		U/	1.	
Bromodichloromethane (UG/L)	U/	1.	0.9	J/	1.	0.9	J/	1.	
1,2-Dichloropropane (UG/L)	U/	1.		U/	1.		U/	1.	
cis-1,3-Dichloropropene (UG/L)	U/	1.		U/	1.		U/	1.	
Trichloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
Dibromochloromethane (UG/L)	U/	1.		U/	1.		U/	1.	
1,1,2-Trichloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
Benzene (UG/L)	U/	1.		U/	1.		U/	1.	
trans-1,3-Dichloropropene (UG/L)	U/	1.		U/	1.		U/	1.	
Bromoform (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dibromoethane (UG/L)	U/	1.		U/	1.		U/	1.	
4-Methyl-2-pentanone (UG/L)	U/	5.		U/	5.		U/	5.	
2-Hexanone (UG/L)	U/R	5.		U/R	5.		U/R	5.	
Tetrachloroethene (UG/L)	U/	1.		U/	1.		U/	1.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	1.		U/	1.		U/	1.	
Toluene (UG/L)	U/	1.		U/	1.		U/	1.	
Chlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

	HD-PWTB02-01 06/30/93			HD-VW03-01 06/29/93			HD-VW05-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	1.		U/	1.		U/	1.
Bromomethane (UG/L)		U/	1.		U/	1.		U/	1.
Vinyl chloride (UG/L)		U/	1.		U/	1.		U/	1.
Chloroethane (UG/L)		U/	1.		U/	1.		U/	1.
Methylene chloride (UG/L)		U/	2.		B/U	2.		B/U	2.
Acetone (UG/L)	4.	J/J	5.		U/R	5.		U/R	5.
Carbon disulfide (UG/L)		U/	1.		U/	1.	0.6	J/	1.
1,1-Dichloroethene (UG/L)		U/	1.		U/	1.		U/	1.
1,1-Dichloroethane (UG/L)		U/	1.		U/	1.		U/	1.
cis-1,2-Dichloroethene (UG/L)		U/	1.		U/	1.		U/	1.
trans-1,2-Dichloroethene (UG/L)		U/	1.		U/	1.		U/	1.
Chloroform (UG/L)	12.	/	1.		/U	1.		U/	1.
1,2-Dichloroethane (UG/L)		U/	1.		U/	1.		U/	1.
2-Butanone (UG/L)		U/R	5.		U/R	5.		U/R	5.
Bromochloromethane (UG/L)		U/	1.		U/	1.		U/	1.
1,1,1-Trichloroethane (UG/L)		U/	1.		U/	1.		U/	1.
Carbon tetrachloride (UG/L)		U/	1.		U/	1.		U/	1.
Bromodichloromethane (UG/L)	0.7	J/J	1.		U/	1.		U/	1.
1,2-Dichloropropane (UG/L)		U/	1.		U/	1.		U/	1.
cis-1,3-Dichloropropene (UG/L)		U/	1.		U/	1.		U/	1.
Trichloroethene (UG/L)		U/	1.		U/	1.		U/	1.
Dibromochloromethane (UG/L)		U/	1.		U/	1.		U/	1.
1,1,2-Trichloroethane (UG/L)		U/	1.		U/	1.		U/	1.
Benzene (UG/L)		U/	1.		U/	1.		U/	1.
trans-1,3-Dichloropropene (UG/L)		U/	1.		U/	1.		U/	1.
Bromoform (UG/L)		U/	1.		U/	1.		U/	1.
1,2-Dibromoethane (UG/L)		U/	1.		U/	1.		U/	1.
4-Methyl-2-pentanone (UG/L)		U/	5.		U/	5.		U/	5.
2-Hexanone (UG/L)		U/R	5.		U/R	5.		U/R	5.
Tetrachloroethene (UG/L)		U/	1.		U/	1.		U/	1.
1,1,2,2-Tetrachloroethane (UG/L)		U/	1.		U/	1.		U/	1.
Toluene (UG/L)		U/	1.		U/	1.		U/	1.
Chlorobenzene (UG/L)		U/	1.		U/	1.		U/	1.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

HD-VW05-91 06/29/93

PARAMETER	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	1.
Bromomethane (UG/L)		U/	1.
Vinyl chloride (UG/L)		U/	1.
Chloroethane (UG/L)		U/	1.
Methylene chloride (UG/L)		B/U	3.
Acetone (UG/L)		U/R	5.
Carbon disulfide (UG/L)	0.6	J/	1.
1,1-Dichloroethene (UG/L)		U/	1.
1,1-Dichloroethane (UG/L)		U/	1.
cis-1,2-Dichloroethene (UG/L)		U/	1.
trans-1,2-Dichloroethene (UG/L)		U/	1.
Chloroform (UG/L)		U/	1.
1,2-Dichloroethane (UG/L)		U/	1.
2-Butanone (UG/L)		U/R	5.
Bromochloromethane (UG/L)		U/	1.
1,1,1-Trichloroethane (UG/L)		U/	1.
Carbon tetrachloride (UG/L)		U/	1.
Bromodichloromethane (UG/L)		U/	1.
1,2-Dichloropropane (UG/L)		U/	1.
cis-1,3-Dichloropropene (UG/L)		U/	1.
Trichloroethene (UG/L)		U/	1.
Dibromochloromethane (UG/L)		U/	1.
1,1,2-Trichloroethane (UG/L)		U/	1.
Benzene (UG/L)		U/	1.
trans-1,3-Dichloropropene (UG/L)		U/	1.
Bromoform (UG/L)		U/	1.
1,2-Dibromoethane (UG/L)		U/	1.
4-Methyl-2-pentanone (UG/L)		U/	5.
2-Hexanone (UG/L)		U/R	5.
Tetrachloroethene (UG/L)		U/	1.
1,1,2,2-Tetrachloroethane (UG/L)		U/	1.
Toluene (UG/L)		U/	1.
Chlorobenzene (UG/L)		U/	1.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: PW Type: LVOC

	HD-PW01-01 07/01/93			HD-PW02-01			HD-PW03-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Ethylbenzene (UG/L)	U/	1.		U/	1.		U/	1.	
Styrene (UG/L)	U/	1.		U/	1.		U/	1.	
Xylenes (total) (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dibromo-3-chloropropane (UG/L)	U/	1.		U/	1.		U/	1.	
1,3-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	
1,4-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

	HD-PW05-01 06/29/93			HD-PWF01-01 06/29/93			HD-PWTB01-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Ethylbenzene (UG/L)	U/	1.		U/	1.		U/	1.	
Styrene (UG/L)	U/	1.		U/	1.		U/	1.	
Xylenes (total) (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dibromo-3-chloropropane (UG/L)	U/	1.		U/	1.		U/	1.	
1,3-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	
1,4-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

	HD-PWTB02-01 06/30/93			HD-VW03-01 06/29/93			HD-VW05-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Ethylbenzene (UG/L)	U/	1.		U/	1.		U/	1.	
Styrene (UG/L)	U/	1.		U/	1.		U/	1.	
Xylenes (total) (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dibromo-3-chloropropane (UG/L)	U/	1.		U/	1.		U/	1.	
1,3-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	
1,4-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOO Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

HO-VW05-91 06/29/93

PARAMETER	CONC	LQ/DVQ	RDL
Ethylbenzene (UG/L)	U/	1.	
Styrene (UG/L)	U/	1.	
Xylenes (total) (UG/L)	U/	1.	
1,2-Dibromo-3-chloropropane (UG/L)	U/	1.	
1,3-Dichlorobenzene (UG/L)	U/	1.	
1,4-Dichlorobenzene (UG/L)	U/	1.	
1,2-Dichlorobenzene (UG/L)	U/	1.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-19

PRIVATE WATER SUPPLY SVOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LSVOC
Generated by: CAW
Date Issued: 21-SEP-93

	HD-PW01-01 07/01/93			HD-PW02-01			HD-PW03-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	5.		B/U	7.		U/	5.	
bis(2-Chloroethyl)ether (UG/L)	U/	5.		U/	5.		U/	5.	
2-Chlorophenol (UG/L)	U/	5.		U/	5.		U/	5.	
2-Methylphenol (UG/L)	U/	5.		0.9	J/	5.	U/	5.	
2,2'-oxybis(1-Chloropropane) (UG/L)	U/	5.		U/	5.		U/	5.	
4-Methylphenol (UG/L)	U/	5.		U/	5.		U/	5.	
n-Nitroso-di-n-propylamine (UG/L)	U/	5.		U/	5.		U/	5.	
'Hexachloroethane (UG/L)	U/	5.		U/	5.		U/	5.	
Nitrobenzene (UG/L)	U/	5.		U/	5.		U/	5.	
Isophorone (UG/L)	U/	5.		U/	5.		U/	5.	
2-Nitrophenol (UG/L)	U/	5.		U/	5.		U/	5.	
2,4-Dimethylphenol (UG/L)	U/	5.		U/	5.		U/	5.	
bis(2-Chloroethoxy)methane (UG/L)	U/	5.		U/	5.		U/	5.	
2,4-Dichlorophenol (UG/L)	U/	5.		U/	5.		U/	5.	
1,2,4-Trichlorobenzene (UG/L)	U/	5.		U/	5.		U/	5.	
Naphthalene (UG/L)	U/	5.		U/	5.		U/	5.	
4-Chloroaniline (UG/L)	U/	5.		U/	5.		U/	5.	
Hexachlorobutadiene (UG/L)	U/	5.		U/	5.		U/	5.	
4-Chloro-3-methylphenol (UG/L)	U/	5.		U/	5.		U/	5.	
2-Methylnaphthalene (UG/L)	U/	5.		U/	5.		U/	5.	
Hexachlorocyclopentadiene (UG/L)	U/	5.		U/	5.		U/	5.	
2,4,6-Trichlorophenol (UG/L)	U/	5.		U/	5.		U/	5.	
2,4,5-Trichlorophenol (UG/L)	U/	20.		U/	20.		U/	20.	
2-Chloronaphthalene (UG/L)	U/	5.		U/	5.		U/	5.	
2-Nitroaniline (UG/L)	U/	20.		U/	20.		U/	20.	
Dimethyl phthalate (UG/L)	U/	5.		U/	5.		U/	5.	
Acenaphthylene (UG/L)	U/	5.		U/	5.		U/	5.	
2,6-Dinitrotoluene (UG/L)	U/	5.		U/	5.		U/	5.	
3-Nitroaniline (UG/L)	U/	20.		U/	20.		U/	20.	
Acenaphthene (UG/L)	U/	5.		U/	5.		U/	5.	
2,4-Dinitrophenol (UG/L)	U/	20.		U/	20.		U/	20.	
4-Nitrophenol (UG/L)	U/	20.		U/	20.		U/	20.	
Dibenzofuran (UG/L)	U/	5.		U/	5.		U/	5.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LSVOC

	HD-PW05-01 06/29/93			HD-PWF01-01 06/29/93			HD-VW03-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	5.		U/	5.		U/	5.	
bis(2-Chloroethyl)ether (UG/L)	U/	5.		U/	5.		U/	5.	
2-Chlorophenol (UG/L)	U/	5.		U/	5.		U/	5.	
2-Methylphenol (UG/L)	U/	5.		U/	5.		U/	5.	
2,2'-oxybis(1-Chloropropane) (UG/L)	U/	5.		U/	5.		U/	5.	
4-Methylphenol (UG/L)	U/	5.		U/	5.		U/	5.	
n-Nitroso-di-n-propylamine (UG/L)	U/	5.		U/	5.		U/	5.	
Hexachloroethane (UG/L)	U/	5.		U/	5.		U/	5.	
Nitrobenzene (UG/L)	U/	5.		U/	5.		U/	5.	
Isophorone (UG/L)	U/	5.		U/	5.		U/	5.	
2-Nitrophenol (UG/L)	U/	5.		U/	5.		U/	5.	
2,4-Dimethylphenol (UG/L)	U/	5.		U/	5.		U/	5.	
bis(2-Chloroethoxy)methane (UG/L)	U/	5.		U/	5.		U/	5.	
2,4-Dichlorophenol (UG/L)	U/	5.		U/	5.		U/	5.	
1,2,4-Trichlorobenzene (UG/L)	U/	5.		U/	5.		U/	5.	
Naphthalene (UG/L)	U/	5.		U/	5.		U/	5.	
4-Chloroaniline (UG/L)	U/	5.		U/	5.	0.7	J/J	5.	
Hexachlorobutadiene (UG/L)	U/	5.		U/	5.		U/	5.	
4-Chloro-3-methylphenol (UG/L)	U/	5.		U/	5.		U/	5.	
2-Methylnaphthalene (UG/L)	U/	5.		U/	5.		U/	5.	
Hexachlorocyclopentadiene (UG/L)	U/	5.		U/	5.		U/	5.	
2,4,6-Trichlorophenol (UG/L)	U/	5.		U/	5.		U/	5.	
2,4,5-Trichlorophenol (UG/L)	U/	20.		U/	20.		U/	20.	
2-Chloronaphthalene (UG/L)	U/	5.		U/	5.		U/	5.	
2-Nitroaniline (UG/L)	U/	20.		U/	20.		U/	20.	
Dimethyl phthalate (UG/L)	U/	5.		U/	5.		U/	5.	
Acenaphthylene (UG/L)	U/	5.		U/	5.		U/	5.	
2,6-Dinitrotoluene (UG/L)	U/	5.		U/	5.		U/	5.	
3-Nitroaniline (UG/L)	U/	20.		U/	20.		U/	20.	
Acenaphthene (UG/L)	U/	5.		U/	5.		U/	5.	
2,4-Dinitrophenol (UG/L)	U/	20.		U/	20.		U/	20.	
4-Nitrophenol (UG/L)	U/	20.		U/	20.		U/	20.	
Dibenzofuran (UG/L)	U/	5.		U/	5.		U/	5.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LSVOC

	HD-VW05-01 06/29/93			HD-VW05-91 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)		B/U	5.		U/	5.
bis(2-Chloroethyl)ether (UG/L)		U/	5.		U/	5.
2-Chlorophenol (UG/L)		U/	5.		U/	5.
2-Methylphenol (UG/L)	0.5	J/	5.		U/	5.
2,2'-oxybis(1-Chloropropane) (UG/L)		U/	5.		U/	5.
4-Methylphenol (UG/L)		U/	5.		U/	5.
n-Nitroso-di-n-propylamine (UG/L)		U/	5.		U/	5.
Hexachloroethane (UG/L)		U/	5.		U/	5.
Nitrobenzene (UG/L)		U/	5.		U/	5.
Isophorone (UG/L)		U/	5.		U/	5.
2-Nitrophenol (UG/L)		U/	5.		U/	5.
2,4-Dimethylphenol (UG/L)		U/	5.		U/	5.
bis(2-Chloroethoxy)methane (UG/L)		U/	5.		U/	5.
2,4-Dichlorophenol (UG/L)		U/	5.		U/	5.
1,2,4-Trichlorobenzene (UG/L)		U/	5.		U/	5.
Naphthalene (UG/L)		U/	5.		U/	5.
4-Chloroaniline (UG/L)		U/	5.		U/	5.
Hexachlorobutadiene (UG/L)		U/	5.		U/	5.
4-Chloro-3-methylphenol (UG/L)		U/	5.		U/	5.
2-Methylnaphthalene (UG/L)		U/	5.		U/	5.
Hexachlorocyclopentadiene (UG/L)		U/	5.		U/	5.
2,4,6-Trichlorophenol (UG/L)		U/	5.		U/	5.
2,4,5-Trichlorophenol (UG/L)		U/	20.		U/	20.
2-Chloronaphthalene (UG/L)		U/	5.		U/	5.
2-Nitroaniline (UG/L)		U/	20.		U/	20.
Dimethyl phthalate (UG/L)		U/	5.		U/	5.
Acenaphthylene (UG/L)		U/	5.		U/	5.
2,6-Dinitrotoluene (UG/L)		U/	5.		U/	5.
3-Nitroaniline (UG/L)		U/	20.		U/	20.
Acenaphthene (UG/L)		U/	5.		U/	5.
2,4-Dinitrophenol (UG/L)		U/	20.		U/	20.
4-Nitrophenol (UG/L)		U/	20.		U/	20.
Dibenzofuran (UG/L)		U/	5.		U/	5.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

4

Matrix: PW Type: LSVOC

	HD-PW01-01 07/01/93			HD-PW02-01			HD-PW03-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/L)	U/	5.		U/	5.		U/	5.	
Diethylphthalate (UG/L)	U/	5.		U/	5.		U/	5.	
4-Chlorophenyl-phenylether (UG/L)	U/	5.		U/	5.		U/	5.	
Fluorene (UG/L)	U/	5.		U/	5.		U/	5.	
4-Nitroaniline (UG/L)	U/	20.		U/	20.		U/	20.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	20.		U/	20.		U/	20.	
n-Nitrosodiphenylamine (UG/L)	U/	5.		U/	5.		U/	5.	
4-Bromophenyl-phenylether (UG/L)	U/	5.		U/	5.		U/	5.	
Hexachlorobenzene (UG/L)	U/	5.		U/	5.		U/	5.	
Pentachlorophenol (UG/L)	U/	20.		U/	20.		U/	20.	
Phenanthrrene (UG/L)	U/	5.		U/	5.		U/	5.	
Anthracene (UG/L)	U/	5.		U/	5.		U/	5.	
Di-n-butylphthalate (UG/L)	U/	5.		U/	5.		U/	5.	
Fluoranthene (UG/L)	U/	5.		U/	5.		U/	5.	
Pyrene (UG/L)	U/	5.		U/	5.		U/	5.	
Butylbenzylphthalate (UG/L)	U/	5.		U/	5.		U/	5.	
3,3'-Dichlorobenzidine (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(a)anthracene (UG/L)	U/	5.		U/	5.		U/	5.	
Chrysene (UG/L)	U/	5.		U/	5.		U/	5.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	5.		B/U	11.		U/	5.	
Di-n-octylphthalate (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(b)fluoranthene (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(k)fluoranthene (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(a)pyrene (UG/L)	U/	5.		U/	5.		U/	5.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	5.		U/	5.		U/	5.	
Dibenz(a,h)anthracene (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(g,h,i)perylene (UG/L)	U/	5.		U/	5.		U/	5.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LSVOC

	HD-PW05-01 06/29/93			HD-PWFB01-01 06/29/93			HD-VW03-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/L)	U/	5.		U/	5.		U/	5.	
Diethylphthalate (UG/L)	U/	5.		U/	5.		U/	5.	
4-Chlorophenyl-phenylether (UG/L)	U/	5.		U/	5.		U/	5.	
Fluorene (UG/L)	U/	5.		U/	5.		U/	5.	
4-Nitroaniline (UG/L)	U/	20.		U/	20.		U/	20.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	20.		U/	20.		U/	20.	
n-Nitrosodiphenylamine (UG/L)	U/	5.		U/	5.		U/	5.	
4-Bromophenyl-phenylether (UG/L)	U/	5.		U/	5.		U/	5.	
Hexachlorobenzene (UG/L)	U/	5.		U/	5.		U/	5.	
Pentachlorophenol (UG/L)	U/	20.		U/	20.		U/	20.	
Phenanthrene (UG/L)	U/	5.		U/	5.		U/	5.	
Anthracene (UG/L)	U/	5.		U/	5.		U/	5.	
Di-n-butylphthalate (UG/L)	U/	5.		U/	5.		U/	5.	
Fluoranthene (UG/L)	U/	5.		U/	5.		U/	5.	
Pyrene (UG/L)	U/	5.		U/	5.		U/	5.	
Butylbenzylphthalate (UG/L)	U/	5.		U/	5.		U/	5.	
3,3'-Dichlorobenzidine (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(a)anthracene (UG/L)	U/	5.		U/	5.		U/	5.	
Chrysene (UG/L)	U/	5.		U/	5.		U/	5.	
bis(2-ethylhexyl)phthalate (UG/L)	B/U	5.	6.	B/	5.		U/	5.	
Di-n-octylphthalate (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(b)fluoranthene (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(k)fluoranthene (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(a)pyrene (UG/L)	U/	5.		U/	5.		U/	5.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	5.		U/	5.		U/	5.	
Dibenz(a,h)anthracene (UG/L)	U/	5.		U/	5.		U/	5.	
Benzo(g,h,i)perylene (UG/L)	U/	5.		U/	5.		U/	5.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
 HOD Landfill RI/FS
 Antioch, Illinois

Matrix: PW Type: LSVOC

	HD-VW05-01 06/29/93			HD-VW05-91 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrotoluene (UG/L)	U/	5.		U/	5.	
Diethylphthalate (UG/L)	U/	5.		U/	5.	
4-Chlorophenyl-phenylether (UG/L)	U/	5.		U/	5.	
Fluorene (UG/L)	U/	5.		U/	5.	
4-Nitroaniline (UG/L)	U/	20.		U/	20.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	20.		U/	20.	
n-Nitrosodiphenylamine (UG/L)	U/	5.		U/	5.	
4-Bromophenyl-phenylether (UG/L)	U/	5.		U/	5.	
Hexachlorobenzene (UG/L)	U/	5.		U/	5.	
Pentachlorophenol (UG/L)	U/	20.		U/	20.	
Phenanthrone (UG/L)	U/	5.		U/	5.	
Anthracene (UG/L)	U/	5.		U/	5.	
Di-n-butylphthalate (UG/L)	U/	5.		U/	5.	
Fluoranthene (UG/L)	U/	5.		U/	5.	
Pyrene (UG/L)	U/	5.		U/	5.	
Butylbenzylphthalate (UG/L)	U/	5.		U/	5.	
3,3'-Dichlorobenzidine (UG/L)	U/	5.		U/	5.	
Benzo(a)anthracene (UG/L)	U/	5.		U/	5.	
Chrysene (UG/L)	U/	5.		U/	5.	
bis(2-ethylhexyl)phthalate (UG/L)	B/U	8.		U/	5.	
Di-n-octylphthalate (UG/L)	U/	5.		U/	5.	
Benzo(b)fluoranthene (UG/L)	U/	5.		U/	5.	
Benzo(k)fluoranthene (UG/L)	U/	5.		U/	5.	
Benzo(a)pyrene (UG/L)	U/	5.		U/	5.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	5.		U/	5.	
Dibenz(a,h)anthracene (UG/L)	U/	5.		U/	5.	
Benzo(g,h,i)perylene (UG/L)	U/	5.		U/	5.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-20

PRIVATE WATER SUPPLY PESTICIDES/PCBS

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LPPCB
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-PW01-01 07/01/93			HD-PW02-01			HD-PW03-01 06/29/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.01		U/	0.01		U/	0.01
beta-BHC (UG/L)		U/	0.01		U/	0.01		U/	0.01
delta-BHC (UG/L)		U/	0.01		U/	0.01		U/	0.01
gamma-BHC (lindane) (UG/L)		U/	0.01		U/	0.01		U/	0.01
Heptachlor (UG/L)		U/	0.01		U/	0.01		U/	0.01
Aldrin (UG/L)		U/	0.01		U/	0.01		U/	0.01
Heptachlor epoxide (UG/L)		U/	0.01		U/	0.01		U/	0.01
Endosulfan I (UG/L)		U/	0.01		U/	0.01		U/	0.01
Dieldrin (UG/L)		U/	0.02		U/	0.02		U/	0.02
4,4'-DDE (UG/L)		U/	0.02		U/	0.02		U/	0.02
Endrin (UG/L)		U/	0.02		U/	0.02		U/	0.02
Endosulfan II (UG/L)		U/	0.02		U/	0.02		U/	0.02
4,4'-DDD (UG/L)		U/	0.02		U/	0.02		U/	0.02
Endosulfan sulfate (UG/L)		U/	0.02		U/	0.02		U/	0.02
4,4'-DDT (UG/L)		U/	0.02		U/	0.02		U/	0.02
Methoxychlor (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endrin ketone (UG/L)		U/	0.02		U/	0.02		U/	0.02
Endrin aldehyde (UG/L)		U/	0.02		U/	0.02		U/	0.02
alpha-Chlordane (UG/L)		U/	0.01		U/	0.01		U/	0.01
gamma-Chlordane (UG/L)		U/	0.01		U/	0.01		U/	0.01
Toxaphene (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1016 (UG/L)		U/	0.2		U/	0.2		U/	0.2
Aroclor-1221 (UG/L)		U/	0.4		U/	0.4		U/	0.4
Aroclor-1232 (UG/L)		U/	0.2		U/	0.2		U/	0.2
Aroclor-1242 (UG/L)		U/	0.2		U/	0.2		U/	0.2
Aroclor-1248 (UG/L)		U/	0.2		U/	0.2		U/	0.2
Aroclor-1254 (UG/L)		U/	0.2		U/	0.2		U/	0.2
Aroclor-1260 (UG/L)		U/	0.2		U/	0.2		U/	0.2

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LPPCB

	HD-PW05-01 06/29/93			HD-PWFB01-01 06/29/93			HD-VW03-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.01		U/	0.01		U/	0.01	
beta-BHC (UG/L)	U/	0.01		U/	0.01		U/	0.01	
delta-BHC (UG/L)	U/	0.01		U/	0.01		U/	0.01	
gamma-BHC (Lindane) (UG/L)	U/	0.01		U/	0.01		U/	0.01	
Heptachlor (UG/L)	U/	0.01		U/	0.01		U/	0.01	
Aldrin (UG/L)	U/	0.01		U/	0.01		U/	0.01	
Heptachlor epoxide (UG/L)	U/	0.01		U/	0.01		U/	0.01	
Endosulfan I (UG/L)	U/	0.01		U/	0.01		U/	0.01	
Dieldrin (UG/L)	U/	0.02		U/	0.02		U/	0.02	
4,4'-DDE (UG/L)	U/	0.02		U/	0.02		U/	0.02	
Endrin (UG/L)	U/	0.02		U/	0.02		U/	0.02	
Endosulfan II (UG/L)	U/	0.02		U/	0.02		U/	0.02	
4,4'-DDD (UG/L)	U/	0.02		U/	0.02		U/	0.02	
Endosulfan sulfate (UG/L)	U/	0.02		U/	0.02		U/	0.02	
4,4'-DDT (UG/L)	U/	0.02		U/	0.02		U/	0.02	
Methoxychlor (UG/L)	U/	0.1		U/	0.1		U/	0.1	
Endrin ketone (UG/L)	U/	0.02		U/	0.02		U/	0.02	
Endrin aldehyde (UG/L)	U/	0.02		U/	0.02		U/	0.02	
alpha-Chlordane (UG/L)	U/	0.01		U/	0.01		U/	0.01	
gamma-Chlordane (UG/L)	U/	0.01		U/	0.01		U/	0.01	
Toxaphene (UG/L)	U/	1.		U/	1.		U/	1.	
Aroclor-1016 (UG/L)	U/	0.2		U/	0.2		U/	0.2	
Aroclor-1221 (UG/L)	U/	0.4		U/	0.4		U/	0.4	
Aroclor-1232 (UG/L)	U/	0.2		U/	0.2		U/	0.2	
Aroclor-1242 (UG/L)	U/	0.2		U/	0.2		U/	0.2	
Aroclor-1248 (UG/L)	U/	0.2		U/	0.2		U/	0.2	
Aroclor-1254 (UG/L)	U/	0.2		U/	0.2		U/	0.2	
Aroclor-1260 (UG/L)	U/	0.2		U/	0.2		U/	0.2	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LPPCB

HD-VW05-01 06/29/93 HD-VW05-91 06/29/93

Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.01		U/	0.01	
beta-BHC (UG/L)	U/	0.01		U/	0.01	
delta-BHC (UG/L)	U/	0.01		U/	0.01	
gamma-BHC (Lindane) (UG/L)	U/	0.01		U/	0.01	
Heptachlor (UG/L)	U/	0.01		U/	0.01	
Aldrin (UG/L)	U/	0.01		U/	0.01	
Heptachlor epoxide (UG/L)	U/	0.01		U/	0.01	
Endosulfan I (UG/L)	U/	0.01		U/	0.01	
Dieldrin (UG/L)	U/	0.02		U/	0.02	
4,4'-DDE (UG/L)	U/	0.02		U/	0.02	
Endrin (UG/L)	U/	0.02		U/	0.02	
Endosulfan II (UG/L)	U/	0.02		U/	0.02	
4,4'-DDD (UG/L)	U/	0.02		U/	0.02	
Endosulfan sulfate (UG/L)	U/	0.02		U/	0.02	
4,4'-DDT (UG/L)	U/	0.02		U/	0.02	
Methoxychlor (UG/L)	U/	0.1		U/	0.1	
Endrin ketone (UG/L)	U/	0.02		U/	0.02	
Endrin aldehyde (UG/L)	U/	0.02		U/	0.02	
alpha-Chlordane (UG/L)	U/	0.01		U/	0.01	
gamma-Chlordane (UG/L)	U/	0.01		U/	0.01	
Toxaphene (UG/L)	U/	1.		U/	1.	
Aroclor-1016 (UG/L)	U/	0.2		U/	0.2	
Aroclor-1221 (UG/L)	U/	0.4		U/	0.4	
Aroclor-1232 (UG/L)	U/	0.2		U/	0.2	
Aroclor-1242 (UG/L)	U/	0.2		U/	0.2	
Aroclor-1248 (UG/L)	U/	0.2		U/	0.2	
Aroclor-1254 (UG/L)	U/	0.2		U/	0.2	
Aroclor-1260 (UG/L)	U/	0.2		U/	0.2	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-21

PRIVATE WATER SUPPLY METALS

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: MTL
Generated by: CAW
Date Issued: 21-SEP-93

	HD-PW01-01 07/01/93			HD-PW02-01			HD-PW03-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/	50.		U/	50.	75.	B/	50.
Antimony (UG/L)		US/	5.		US/	5.		US/	5.
Arsenic (UG/L)		U/	2.		U/	2.		U/	2.
Barium (UG/L)	260.	/	10.	109.	B/	10.	131.	B/	10.
Beryllium (UG/L)		U/	5.		U/	5.		U/	5.
Cadmium (UG/L)		U/	0.2		U/	0.2		U/	0.2
Calcium (UG/L)	82700.	/	1000.	31900.	/	1000.	32700.	/	1000.
Chromium, total (UG/L)	0.89	B/	0.2	0.56	B/	0.2	0.2	B/	0.2
Cobalt (UG/L)		U/	10.	10.	B/	10.		U/	10.
Copper (UG/L)	26.	/	10.		U/	10.		U/	10.
Iron (UG/L)	3050.	/	20.	643.	/	20.	549.	/	20.
Lead (UG/L)	5.5	/	3.		U/	3.		U/	3.
Magnesium (UG/L)	47600.	/	1000.	14900.	/	1000.	14500.	/	1000.
Manganese (UG/L)	26.	/	10.		U/	10.		U/	10.
Mercury (UG/L)		U/	0.2		U/	0.2		U/	0.2
Nickel (UG/L)		U/	20.		U/	20.		U/	20.
Potassium (UG/L)	2320.	B/	100.	1570.	B/	100.	1760.	B/	100.
Selenium (UG/L)		US/	2.		US/	2.		US/	2.
Silver (UG/L)		US/UJ	0.5		US/UJ	0.5		US/UJ	0.5
Sodium (UG/L)	56400.	/	2000.	53000.	/	2000.	53400.	/	2000.
Thallium (UG/L)		U/	2.		U/	2.		U/	2.
Vanadium (UG/L)	2.7	BS/	2.		U/	2.		U/	2.
Zinc (UG/L)	73.	/	10.		U/	10.	608.	/	10.
Cyanide (UG/L)		U/	5.		U/	5.		U/	5.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT

HOD Landfill RI/FS

Antioch, Illinois

Matrix: PW Type: MTL

	HD-PW05-01 06/29/93			HD-PWFB01-01 06/29/93			HD-VW03-01 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/	50.		U/	50.		U/	50.
Antimony (UG/L)		US/	5.		US/	5.		US/	5.
Arsenic (UG/L)		U/	2.		U/	2.	2.1	B/	2.
Barium (UG/L)	61.	B/	10.		U/	10.	59.	B/	10.
Beryllium (UG/L)		U/	5.		U/	5.		U/	5.
Cadmium (UG/L)		U/	0.2		U/	0.2		U/	0.2
Calcium (UG/L)	25600.	/	1000.		U/	1000.	41000.	/	1000.
Chromium, total (UG/L)	0.46	B/	0.2		U/	0.2		U/	0.2
Cobalt (UG/L)		U/	10.		U/	10.		U/	10.
Copper (UG/L)		U/	10.		U/	10.		U/	10.
Iron (UG/L)	162.	/	20.		U/	20.	646.	/	20.
Lead (UG/L)		U/	3.		U/	3.		U/	3.
Magnesium (UG/L)	17200.	/	1000.		U/	1000.	29800.	/	1000.
Manganese (UG/L)		U/	10.		U/	10.		U/	10.
Mercury (UG/L)		U/	0.2		U/	0.2		U/	0.2
Nickel (UG/L)		U/	20.		U/	20.		U/	20.
Potassium (UG/L)	1060.	B/	100.		U/	100.	1490.	B/	100.
Selenium (UG/L)		US/	2.		US/	2.		US/	2.
Silver (UG/L)		U/	0.5		U/	0.5		US/UJ	0.5
Sodium (UG/L)	60600.	/	2000.		U/	2000.	41300.	/	2000.
Thallium (UG/L)		U/	2.		U/	2.		U/	2.
Vanadium (UG/L)		U/	2.		U/	2.		U/	2.
Zinc (UG/L)	48.	/	10.		U/	10.	25.	/	10.
Cyanide (UG/L)		U/	5.		U/	5.		U/	5.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: MTL

	HD-VW05-01 06/29/93			HD-VW05-91 06/29/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)	55.	B/	50.		U/	50.
Antimony (UG/L)		US/	5.		US/	5.
Arsenic (UG/L)	4.	B/	2.	4.5	B/	2.
Barium (UG/L)	94.	B/	10.	88.	B/	10.
Beryllium (UG/L)		U/	5.		U/	5.
Cadmium (UG/L)		U/	0.2		U/	0.2
Calcium (UG/L)	55400.	/	1000.	54400.	/	1000.
Chromium, total (UG/L)	0.25	B/	0.2	0.24	B/	0.2
Cobalt (UG/L)		U/	10.		U/	10.
Copper (UG/L)		U/	10.		U/	10.
Iron (UG/L)	1100.	/	20.	1100.	/	20.
Lead (UG/L)		U/	3.		U/	3.
Magnesium (UG/L)	36600.	/	1000.	37400.	/	1000.
Manganese (UG/L)	10.	B/	10.	10.	B/	10.
Mercury (UG/L)		U/	0.2		U/	0.2
Nickel (UG/L)		U/	20.		U/	20.
Potassium (UG/L)	1590.	B/	100.	1570.	B/	100.
Selenium (UG/L)		US/	2.		US/	2.
Silver (UG/L)		US/UJ	0.5		US/UJ	0.5
Sodium (UG/L)	27800.	/	2000.	30200.	/	2000.
Thallium (UG/L)		U/	2.		U/	2.
Vanadium (UG/L)		U/	2.		U/	2.
Zinc (UG/L)		U/	10.		U/	10.
Cyanide (UG/L)		U/	5.		U/	5.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-22

SURFACE WATER VOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: VOC
Generated by: CAW
Date Issued: 21-SEP-93

	HD-SWFBO1-01 05/13/93			HD-SWS101-01 05/14/93			HD-SWS201-01 05/13/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)	30.	/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
'4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)	1.	J/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: VOC

	HD-SWS301-01 05/14/93			HD-SWS301-91 05/14/93			HD-SWTB01-01 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		/U	33.		U/	10.	6.	J/	10.
Acetone (UG/L)		/U	21.		/U	18.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropane (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)	2.	J/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)	3.	J/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-23

SURFACE WATER SVOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC
Generated by: CAW
Date Issued: 21-SEP-93

	HD-SWFBO1-01 05/13/93			HD-SWS101-01 05/14/93			HD-SWS201-01 05/13/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	26.		U/	26.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
Acenaphthene (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

2

Matrix: SW Type: SVOC

	HD-SWS301-01 05/14/93			HD-SWS301-91 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	10.		U/	10.	
Isophorone (UG/L)	U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	10.	
Naphthalene (UG/L)	U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	26.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	26.		U/	26.	
Dimethylphthalate (UG/L)	U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	26.		U/	26.	
Acenaphthene (UG/L)	U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC

Parameter	HD-SWFB01-01 05/13/93			HD-SWS101-01 05/14/93			HD-SWS201-01 05/13/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.		U/	26.		U/	26.	
4-Nitrophenol (UG/L)	U/	26.		U/	26.		U/	26.	
Dibenzofuran (UG/L)	U/	10.		U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	26.		U/	26.		U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.		U/	26.		U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	26.		U/	26.		U/	26.	
Phenanthrone (UG/L)	U/	10.		U/	10.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	10.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC

	HD-SWS301-01 05/14/93			HD-SWS301-91 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.		U/	26.	
4-Nitrophenol (UG/L)	U/	26.		U/	26.	
Dibenzofuran (UG/L)	U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	10.	
Fluorene (UG/L)	U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	26.		U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.		U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	26.		U/	26.	
Phenanthrene (UG/L)	U/	10.		U/	10.	
Anthracene (UG/L)	U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	10.		U/	10.	
Pyrene (UG/L)	U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	10.	
Chrysene (UG/L)	U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	10.	
Carbazole (UG/L)	U/	10.		U/	10.	

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-24

SURFACE WATER PESTICIDES/PCBs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: PPCB
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-SWFB01-01 05/13/93			HD-SWS101-01 05/14/93			HD-SWS201-01 05/13/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.051		U/	0.052		U/	0.05
beta-BHC (UG/L)		U/	0.051		U/	0.052		U/	0.05
delta-BHC (UG/L)		U/	0.051		U/	0.052		U/	0.05
gamma-BHC (Lindane) (UG/L)		U/	0.051		U/	0.052		U/	0.05
Heptachlor (UG/L)		U/	0.051		U/	0.052		U/	0.05
Aldrin (UG/L)		U/	0.051		U/	0.052		U/	0.05
Heptachlor epoxide (UG/L)		U/	0.051		U/	0.052		U/	0.05
Endosulfan I (UG/L)		U/	0.051		U/	0.052		U/	0.05
Dieldrin (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDE (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endrin (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endosulfan II (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDD (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDT (UG/L)		U/	0.1		U/	0.1		U/	0.1
Methoxychlor (UG/L)		U/	0.51		U/	0.52		U/	0.5
Endrin ketone (UG/L)		U/	0.1		U/	0.1		U/	0.1
alpha-Chlordane (UG/L)		U/	0.051		U/	0.052		U/	0.05
gamma-Chlordane (UG/L)		U/	0.051		U/	0.052		U/	0.05
Toxaphene (UG/L)		U/	5.1		U/	5.2		U/	5.
Aroclor-1016 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1221 (UG/L)		U/	2.		U/	2.1		U/	2.
Aroclor-1232 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1242 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1248 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1254 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1260 (UG/L)		U/	1.		U/	1.		U/	1.
Endrin aldehyde (UG/L)		U/	0.1		U/	0.1		U/	0.1

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: PPCB

HD-SWS301-01 05/14/93 HD-SWS301-91 05/14/93

Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.05		U/	0.051
beta-BHC (UG/L)		U/	0.05		U/	0.051
delta-BHC (UG/L)		U/	0.05		U/	0.051
gamma-BHC (Lindane) (UG/L)		U/	0.05		U/	0.051
Heptachlor (UG/L)		U/	0.05		U/	0.051
Aldrin (UG/L)		U/	0.05		U/	0.051
Heptachlor epoxide (UG/L)		U/	0.05		U/	0.051
Endosulfan I (UG/L)		U/	0.05		U/	0.051
Dieldrin (UG/L)		U/	0.1		U/	0.1
4,4'-DDE (UG/L)		U/	0.1		U/	0.1
Endrin (UG/L)		U/	0.1		U/	0.1
Endosulfan II (UG/L)		U/	0.1		U/	0.1
4,4'-DDD (UG/L)		U/	0.1		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.1		U/	0.1
4,4'-DDT (UG/L)		U/	0.1		U/	0.1
Methoxychlor (UG/L)		U/	0.5		U/	0.51
Endrin ketone (UG/L)		U/	0.1		U/	0.1
alpha-Chlordane (UG/L)		U/	0.05		U/	0.051
gamma-Chlordane (UG/L)		U/	0.05		U/	0.051
Toxaphene (UG/L)		U/	5.		U/	5.1
Aroclor-1016 (UG/L)		U/	1.		U/	1.
Aroclor-1221 (UG/L)		U/	2.		U/	2.
Aroclor-1232 (UG/L)		U/	1.		U/	1.
Aroclor-1242 (UG/L)		U/	1.		U/	1.
Aroclor-1248 (UG/L)		U/	1.		U/	1.
Aroclor-1254 (UG/L)		U/	1.		U/	1.
Aroclor-1260 (UG/L)		U/	1.		U/	1.
Endrin aldehyde (UG/L)		U/	0.1		U/	0.1

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-25

SURFACE WATER INDICATORS AND METALS

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: MTL
Generated by: CAW
Date Issued: 21-SEP-93

Parameter	HD-SWFB01-01 05/13/93			HD-SWS101-01 05/14/93			HD-SWS201-01 05/13/93		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		U/	39.	113.	B/	39.	107.	B/	39.
Antimony (UG/L)		U/	24.		U/	24.		U/	24.
Arsenic (UG/L)		U/	3.		U/	3.		U/	3.
Barium (UG/L)		U/	1.	19.4	B/	1.	22.2	B/	1.
Beryllium (UG/L)		U/	1.		U/	1.		U/	1.
Cadmium (UG/L)		U/	3.	3.3	B/	3.		U/	3.
Calcium (UG/L)	1260.	B/	12.	52600.	/	12.	46700.	/	12.
Chromium, total (UG/L)		U/	3.	3.2	B/	3.		U/	3.
Cobalt (UG/L)		U/	4.		U/	4.		U/	4.
Copper (UG/L)		U/UJ	2.	2.3	B/J	2.	2.1	B/J	2.
Iron (UG/L)	35.2	B/	7.		/U	159.	424.	/	7.
Lead (UG/L)		U/	2.		U/	2.		U/	2.
Magnesium (UG/L)	25.6	B/	17.	25700.	/	17.	24900.	/	17.
Manganese (UG/L)		U/	1.	50.9	/	1.	56.8	/	1.
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		U/	5.		U/	5.		U/	5.
Potassium (UG/L)		U/	55.	2210.	B/	55.	2110.	B/	55.
Selenium (UG/L)		U/	2.		U/	2.		U/	2.
Silver (UG/L)		U/	3.		U/	3.		U/	3.
Sodium (UG/L)		B/U	183.	26000.	/	24.	34400.	/	24.
Thallium (UG/L)		U/	2.		U/	2.		U/	2.
Vanadium (UG/L)		U/	2.		U/	2.		U/	2.
Zinc (UG/L)	154.	/	6.		/U	688.		/U	129.
Cyanide (UG/L)					U/	0.62		U/UJ	0.62

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: MTL

	HD-SWS301-01 05/14/93			HD-SWS301-91 05/14/93		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)	55.5	B/	39.	91.1	B/	39.
Antimony (UG/L)		U/	24.	27.6	B/	24.
Arsenic (UG/L)		U/	3.		U/	3.
Barium (UG/L)	21.9	B/	1.	22.2	B/	1.
Beryllium (UG/L)		U/	1.		U/	1.
Cadmium (UG/L)		U/	3.		U/	3.
Calcium (UG/L)	52500.	/	12.	52400.	/	12.
Chromium, total (UG/L)		U/	3.		U/	3.
Cobalt (UG/L)		U/	4.		U/	4.
Copper (UG/L)		U/UJ	2.		U/UJ	2.
Iron (UG/L)	318.	/	7.	355.	/	7.
Lead (UG/L)	2.	B/	2.		U/	2.
Magnesium (UG/L)	25500.	/	17.	25400.	/	17.
Manganese (UG/L)	54.2	/	1.	53.7	/	1.
Mercury (UG/L)		U/	0.1		U/	0.1
Nickel (UG/L)		U/	5.		U/	5.
Potassium (UG/L)	2060.	B/	55.	2010.	B/	55.
Selenium (UG/L)		U/	2.		U/	2.
Silver (UG/L)		U/	3.		U/	3.
Sodium (UG/L)	35000.	/	24.	34900.	/	24.
Thallium (UG/L)		U/	2.		U/	2.
Vanadium (UG/L)		U/	2.		U/	2.
Zinc (UG/L)		/U	653.		/U	662.
Cyanide (UG/L)		B/UJ	0.75		U/UJ	0.62

Note: In the sample ID: "-91" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX O-26

SURFACE WATER TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOO Landfill RI/FS
Antioch, Illinois

1

Matrix: SW
Generated by: CAW
Date Issued: 21-SEP-93

HD-SWFBO1-01 05/13/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	4.	J/

HD-SWS301-01 05/14/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	5.	J/

HD-SWTB01-01 05/14/93

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	6.	J/

APPENDIX P

ROUND 2 ANALYTICAL LABORATORY RESULTS (P-1 THROUGH P-13)

APPENDIX P

- P-1 Data Quality Summary, Data Qualifier Definitions and Analytical Data Results
- P-2 Sediment VOCs
- P-3 Sediment SVOCs
- P-4 Sediment Pesticides/PCBs
- P-5 Sediment Metals
- P-6 Sediment TICs
- P-7 Groundwater VOCs
- P-8 Private Water Supply VOCs
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- P-10 Surface Water SVOCs
- P-11 Surface Water Pesticides/PCBs
- P-12 Surface Water Indicators and Metals
- P-13 Surface Water TICs

APPENDIX P-1

**DATA QUALITY SUMMARY, DATA QUALIFIER DEFINITIONS,
AND ANALYTICAL DATA RESULTS**

DATA QUALITY SUMMARY, DATA QUALIFIER DEFINITIONS, AND ANALYTICAL DATA RESULTS

This appendix provides analytical reports, data qualifier definitions, and a summary of the data quality for analyses performed on samples collected during May through July 1993, and March of 1994 at the H.O.D. Landfill.

The analytical data has been computerized in a format organized to facilitate data review and evaluation. The computerized data set includes the data qualifiers provided by the performing laboratory as well as data qualifiers added by the data reviewer in accordance with the data validation procedures. The assessment of data quality is based on laboratory and field quality control (QC) criteria as described in the Quality Assurance Project Plan (QAPP). Data validation was performed on laboratory analyses according to U.S. EPA guidelines.

DATA QUALITY SUMMARY

Laboratory results for Round 1 groundwater, private well water, surface water, leachate, landfill gas, and surface soils collected during May through July 1993 and Round 2 groundwater, surfacewater, sediments and village well water samples collected in March of 1994 at the HOD Landfill were qualified by the laboratory and during the data validation.

The laboratory-provided qualifiers (LQs) will include such items as:

- Non-detects
- Concentration below required detection limit
- Estimated concentration due to poor QC data
- Concentration of chemical also found in the laboratory blank

The data validation qualifiers (DVQs) will indicate whether the data are:

- Usable as a quantitative concentration
- Usable with caution as an estimated concentration
- Unusable due to out-of-control QC results

For the H.O.D. Landfill RI/FS, Round 1 estimated results are considered acceptable for use in site characterization and evaluation. Unusable results can not be used for site characterization and evaluation.

Round 1 private residence well results for the volatile organic compounds 2-butanone, 2-hexanone, and acetone are qualified as unusable and flagged "R" due to response factors below acceptable QC limits of 0.05. These compounds may or may not be present in the qualified samples.

The Round 1 surface water matrix field blank (HD-SWFB01-01) for cyanide was lost during analysis. Because cyanide was not detected in any investigative samples, this loss does not affect the data quality.

Round 2 data collected during March of 1994 and qualified as unusable includes the VOCs acetone and methylene chloride. Internal standard recoveries for the sediment samples were all less than acceptable QC limits; samples were re-analyzed as required by the SOW. Low recoveries are likely due to matrix related interferences. Results between the two analyses indicate acetone and methylene chloride results are likely the result of laboratory contamination. Because the method blanks did not contain these common laboratory contaminants, detects have been qualified as unusable (R) rather than elevating the detection limit.

Round 2 private well results for 2-butanone and acetone are qualified as unusable (R) due to response factors below acceptable QC limits of 0.05.

The remainder of the analytical data for samples collected during May through July 1993 (Round 1) and in March 1994 (Round 2) at the H.O.D. landfill is acceptable for use in site characterization and evaluation.

SUMMARY OF DATA QUALIFIER DEFINITIONS

Laboratory qualified data are flagged by the performing laboratory. Data may be further qualified by Warzyn personnel during the data validation process. Data qualifiers are letter or symbol codes as outlined below. If data are qualified, the qualifiers are presented with results. The data validation qualifiers (DVQ) and laboratory qualifiers (LQ) are presented with the data as separate columns.

Laboratory Qualifier Definitions

The following qualifiers were used by laboratories performing the various analyses. The qualifiers defined below are presented in the "LQ" column adjacent to the result.

Laboratory Qualifiers for Organic Analysis

U – Indicates the compound was analyzed for, but was not detected. The sample quantification limit is corrected for dilution and for percent moisture.

J – Indicates an estimated value. This flag is used either when estimating a concentration for Tentatively Identified Compounds (TICs) where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria, yet the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.

- N – Indicates presumptive evidence of a compound. This flag is used only for TICs where the identification is based on a mass spectral library search. It is applied to all TIC results.
- B – This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified compound. (Note the difference between the LQ inorganic qualifier B and the LQ organic qualifier B.)
- E – This flag identifies a compound where the concentration exceeded the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed. If the dilution of the extract cause any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported.
- D – This flag identifies a compound that was identified in an analysis at a secondary dilution factor.
- P – This flag is used for a pesticide/PCB target compound when there is a greater than 25% difference for the detected concentrations between the two GC columns. The lower of the two values is reported.
- C – This flag applies to pesticide results where the identification has been confirmed by GC/MS.
- A – This flag indicates that a TIC is a suspected aldol condensation product.
- X – X, Y, and Z flags may be designated by the laboratory to properly define the results. For example, X is often applied to semi-volatile data which were calculated manually (as opposed to computer generated) by the laboratory.

Laboratory Qualifiers for Inorganic Analyses

- B – This flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Contract Required Detection Limit (CRDL). (Note the difference between the LQ inorganic qualifier B and the LQ organic qualifier B.)
- U – Indicates analyte was analyzed for, but was not detected. The value reported is the instrument detection limit value (e.g., 10U).
- E – Indicates the value is estimated due to the presence of interference.
- S – Indicates the value was determined by the method of standard addition.

- M – Indicates duplicate injection precision for furnace analysis was not met.
- N – Indicates spike sample recovery was not within control limits.
- * – Indicates duplicate analysis was not within control limits.
- + – Indicates the correlation coefficient for method of standard addition was less than 0.995.
- W – Post-digestion spike for Furnace AA analysis was out of control limits (85-115%), while sample absorbance was less than 50% of spike absorbance.

Data Validation Qualifier Definitions

The following qualifiers were used by Warzyn personnel in the validation of laboratory results. Field QC samples (trip blanks, field blanks, field duplicates) were also evaluated during the data validation process. Validation of organics data was performed using *National Functional Guidelines for Organic Data Review*, U.S. EPA, June 1991. Inorganics data validation was performed using *Laboratory Data Validation, Functional Guideline for Evaluating Inorganic Analyses*, U.S. EPA, July 1988.

The data validation process was performed with specific project needs in mind. Data quality objectives and intended data usage, as outlined in the QAPP, were referenced. The data validation qualifiers defined below are presented with the data under the "DVQ" column.

Data Validation Qualifiers for Organic Analyses

- J – The associated numerical value is an estimated quantity, because quality control criteria were not met and/or because the value was less than the CRQL. TICs are flagged as estimated (J).
- U – Indicates compound was analyzed for, but was not detected. The associated value is the sample quantitation limit. The sample quantitation limit may be elevated due to contamination detected in laboratory blanks, field blanks, or trip blanks (for VOCs).
- UJ – Indicates the compound was analyzed for, but was not detected. The associated numerical value is an estimated quantitation limit.
- R – Quality control indicates the result is not usable (compound may or may not be present).

Data Qualifiers for Inorganic Analyses

- J – The associated numerical value is an estimated quantity because quality control criteria were not met (i.e., out of control (low or high) spike recoveries, interferences in serial dilution, or poor correlation coefficients).

- R – Quality control data indicates that the value is not usable (analyte may or may not be present).
- U – Indicates analyte was analyzed for, but was not detected. The associated value is the sample quantitation limit. The sample quantitation limit may be elevated due to contamination detected in laboratory blanks or field blanks.
- UJ – The analyte was analyzed for, but was not detected. The associated numerical value is an estimated quantitation limit.

PMS/dlp
J:\2386\0096\RI_REVIS\RI_TEXT\87.DOC

APPENDIX P-2

SEDIMENTS VOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: VOC
Generated by: CAW
Date Issued: 03-JUN-94

	ID-SDPSG1-02 03/29/94			ID-SDPSG2-02 03/29/94			ID-SDS101-02 03/29/94		
Parameter	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL
Chloromethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Bromomethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Vinyl chloride (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Chloroethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Methylene chloride (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Acetone (UG/KG)		E/R	2100.		/R	530.		J/R	12.
Carbon disulfide (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
1,1-Dichloroethene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
1,1-Dichloroethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
1,2-Dichloroethene (total) (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Chloroform (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
1,2-Dichloroethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
2-Butanone (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
1,1,1-Trichloroethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Carbon tetrachloride (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Bromodichloromethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
1,2-Dichloropropane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
cis-1,3-Dichloropropene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Trichloroethene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Dibromochloromethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
1,1,2-Trichloroethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Benzene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
trans-1,3-Dichloropropene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Bromoform (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
4-Methyl-2-pentanone (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
2-Hexanone (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Tetrachloroethene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
1,1,2,2-Tetrachloroethane (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Toluene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Chlorobenzene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Ethylbenzene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Styrene (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.
Xylenes (total) (UG/KG)		U/UJ	77.		U/UJ	62.		U/UJ	16.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: VOC

	HD-SDS201-02 03/28/94			HD-SDS301-02 03/28/94			HD-SDS401-02 03/29/94		
Parameter	Conc	LQ/DVQ	RDL	Conc	LQ/DVQ	RDL	Conc	LQ/DVQ	RDL
Chloromethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Bromomethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Vinyl chloride (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Chloroethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Methylene chloride (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Acetone (UG/KG)		/R	500.		/R	260.		U/UJ	34.
Carbon disulfide (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
1,1-Dichloroethene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
1,1-Dichloroethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
1,2-Dichloroethene (total) (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Chloroform (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
1,2-Dichloroethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
2-Butanone (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
1,1,1-Trichloroethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Carbon tetrachloride (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Bromodichloromethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
1,2-Dichloropropane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
cis-1,3-Dichloropropene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Trichloroethene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Dibromochloromethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
1,1,2-Trichloroethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Benzene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
trans-1,3-Dichloropropene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Bromoform (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
4-Methyl-2-pentanone (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
2-Hexanone (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Tetrachloroethene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
1,1,2,2-Tetrachloroethane (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Toluene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Chlorobenzene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Ethylbenzene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Styrene (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.
Xylenes (total) (UG/KG)		U/UJ	46.		U/UJ	26.		U/UJ	34.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: VOC

	HD-SDS401-92 03/29/94			HD-SDS501-02 03/29/94			IID-SDS601-02 03/29/94		
Parameter	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL
Chloromethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Bromomethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Vinyl chloride (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Chloroethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Methylene chloride (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Acetone (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Carbon disulfide (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
1,1-Dichloroethene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
1,1-Dichloroethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
1,2-Dichloroethene (total) (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Chloroform (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
1,2-Dichloroethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
2-Butanone (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
1,1,1-Trichloroethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Carbon tetrachloride (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Bromodichloromethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
1,2-Dichloropropane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
cis-1,3-Dichloropropene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Trichloroethene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Dibromochloromethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
1,1,2-Trichloroethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Benzene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
trans-1,3-Dichloropropene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Bromoform (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
4-Methyl-2-pentanone (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
2-Hexanone (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Tetrachloroethene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
1,1,2,2-Tetrachloroethane (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Toluene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Chlorobenzene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Ethylbenzene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Styrene (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.
Xylenes (total) (UG/KG)		U/UJ	33.		U/	15.		U/UJ	21.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-3

SEDIMENTS SVOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: SVOC
Generated by: CAW
Date Issued: 03-JUN-94

Parameter	HD-SDPSG1-02 03/29/94			HD-SDPSG2-02 03/29/94			HD-SDS101-02 03/29/94		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
bis(2-Chloroethyl) ether (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2-Chlorophenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
1,3-Dichlorobenzene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
1,4-Dichlorobenzene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
1,2-Dichlorobenzene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2-Methylphenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
bis(2-Chloroisopropyl)ether (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
4-Methylphenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
N-Nitroso-di-n-propylamine (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Hexachloroethane (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Nitrobenzene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Isophorone (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2-Nitrophenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2,4-Dimethylphenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
bis(2-Chloroethoxy)methane (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2,4-Dichlorophenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
1,2,4-Trichlorobenzene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Naphthalene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
4-Chloroaniline (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Hexachlorobutadiene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
4-Chloro-3-methylphenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2-Methylnaphthalene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Hexachlorocyclopentadiene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2,4,6-Trichlorophenol (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2,4,5-Trichlorophenol (UG/KG)	U/	6200.		U/UJ	5000.		U/	1200.	
2-Chloronaphthalene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2-Nitroaniline (UG/KG)	U/	6200.		U/UJ	5000.		U/	1200.	
Dimethylphthalate (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Acenaphthylene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2,6-Dinitrotoluene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
3-Nitroaniline (UG/KG)	U/	6200.		U/UJ	5000.		U/	1200.	
Acenaphthene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	

Note: In the sample ID: "-92" indicates a field duplicate, "1B" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: SVOC

	ID-SDS201-02 03/28/94			ID-SDS301-02 03/28/94			ID-SDS401-02 03/29/94		
Parameter	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL
Phenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
bis(2-Chloroethyl) ether (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2-Chlorophenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
1,3-Dichlorobenzene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
1,4-Dichlorobenzene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
1,2-Dichlorobenzene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2-Methylphenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
bis(2-Chloroisopropyl)ether (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
4-Methylphenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
N-Nitroso-di-n-propylamine (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Hexachloroethane (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Nitrobenzene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Isophorone (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2-Nitrophenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2,4-Dimethylphenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
bis(2-Chloroethoxy)methane (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2,4-Dichlorophenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
1,2,4-Trichlorobenzene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Naphthalene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
4-Chloroaniline (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Hexachlorobutadiene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
4-Chloro-3-methylphenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2-Methylnaphthalene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Hexachlorocyclopentadiene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2,4,6-Trichlorophenol (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2,4,5-Trichlorophenol (UG/KG)		U/UJ	3600.		U/	2100.		U/	2800.
2-Chloronaphthalene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2-Nitroaniline (UG/KG)		U/UJ	3600.		U/	2100.		U/	2800.
Dimethylphthalate (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Acenaphthylene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2,6-Dinitrotoluene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
3-Nitroaniline (UG/KG)		U/UJ	3600.		U/	2100.		U/	2800.
Acenaphthene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: SVOC

	ID-SDS401-92 03/29/94			ID-SDS501-02 03/29/94			ID-SDS601-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
bis(2-Chloroethyl) ether (UG/KG)	U/	1100.		U/	490.		U/	690.	
2-Chlorophenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
1,3-Dichlorobenzene (UG/KG)	U/	1100.		U/	490.		U/	690.	
1,4-Dichlorobenzene (UG/KG)	U/	1100.		U/	490.		U/	690.	
1,2-Dichlorobenzene (UG/KG)	U/	1100.		U/	490.		U/	690.	
2-Methylphenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
bis(2-Chloroisopropyl)ether (UG/KG)	U/	1100.		U/	490.		U/	690.	
4-Methylphenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
N-Nitroso-di-n-propylamine (UG/KG)	U/	1100.		U/	490.		U/	690.	
Hexachloroethane (UG/KG)	U/	1100.		U/	490.		U/	690.	
Nitrobenzene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Isophorone (UG/KG)	U/	1100.		U/	490.		U/	690.	
2-Nitrophenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
2,4-Dimethylphenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
bis(2-Chloroethoxy)methane (UG/KG)	U/	1100.		U/	490.		U/	690.	
2,4-Dichlorophenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
1,2,4-Trichlorobenzene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Naphthalene (UG/KG)	U/	1100.		U/	490.		U/	690.	
4-Chloroaniline (UG/KG)	U/	1100.		U/	490.		U/	690.	
Hexachlorobutadiene (UG/KG)	U/	1100.		U/	490.		U/	690.	
4-Chloro-3-methylphenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
2-Methylnaphthalene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Hexachlorocyclopentadiene (UG/KG)	U/	1100.		U/	490.		U/	690.	
2,4,6-Trichlorophenol (UG/KG)	U/	1100.		U/	490.		U/	690.	
2,4,5-Trichlorophenol (UG/KG)	U/	2700.		U/	1200.		U/	1700.	
2-Chloronaphthalene (UG/KG)	U/	1100.		U/	490.		U/	690.	
2-Nitroaniline (UG/KG)	U/	2700.		U/	1200.		U/	1700.	
Dimethylphthalate (UG/KG)	U/	1100.		U/	490.		U/	690.	
Acenaphthylene (UG/KG)	U/	1100.		U/	490.		U/	690.	
2,6-Dinitrotoluene (UG/KG)	U/	1100.		U/	490.		U/	690.	
3-Nitroaniline (UG/KG)	U/	2700.		U/	1200.		U/	1700.	
Acenaphthene (UG/KG)	U/	1100.		U/	490.		U/	690.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: SVOC

	HID-SOPSG1-02 03/29/94			HID-SOPSG2-02 03/29/94			HID-SDS101-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/KG)	U/	6200.		U/UJ	5000.		U/	1200.	
4-Nitrophenol (UG/KG)	U/	6200.		U/UJ	5000.		U/	1200.	
Dibenzofuran (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
2,4-Dinitrotoluene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Diethylphthalate (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
4-Chlorophenyl-phenylether (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Fluorene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
4-Nitroaniline (UG/KG)	U/	6200.		U/UJ	5000.		U/	1200.	
4,6-Dinitro-2-methylphenol (UG/KG)	U/	6200.		U/UJ	5000.		U/	1200.	
N-nitrosodiphenylamine (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
4-Bromophenyl-phenylether (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Hexachlorobenzene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Pentachlorophenol (UG/KG)	U/	6200.		U/UJ	5000.		U/	1200.	
Phenanthrrene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Anthracene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Di-n-butylphthalate (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Fluoranthene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Pyrene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Butylbenzylphthalate (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
3,3'-Dichlorobenzidine (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Benzo(a)anthracene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Chrysene (UG/KG)	U/	2500.		U/UJ	2010.		U/	520.	
bis(2-ethylhexyl)phthalate (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Di-n-octyl Phthalate (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Benzo(b)fluoranthene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Benzo(k)fluoranthene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Benzo(a)pyrene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Indeno(1,2,3-cd)pyrene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Dibenz(a,h)anthracene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Benzo(g,h,i)perylene (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	
Carbazole (UG/KG)	U/	2500.		U/UJ	2100.		U/	520.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: SVOC

HOD-SDS201-02 03/28/94 HOD-SDS301-02 03/28/94 HOD-SDS401-02 03/29/94

Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/KG)		U/UJ	3600.		U/	2100.		U/	2800.
4-Nitrophenol (UG/KG)		U/UJ	3600.		U/	2100.		U/	2800.
Dibenzofuran (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
2,4-Dinitrotoluene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Diethylphthalate (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
4-Chlorophenyl-phenylether (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Fluorene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
4-Nitroaniline (UG/KG)		U/UJ	3600.		U/	2100.		U/	2800.
4,6-Dinitro-2-methylphenol (UG/KG)		U/UJ	3600.		U/	2100.		U/	2800.
N-nitrosodiphenylamine (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
4-Bromophenyl-phenylether (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Hexachlorobenzene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Pentachlorophenol (UG/KG)		U/UJ	3600.		U/	2100.		U/	2800.
Phenanthrene (UG/KG)		U/UJ	1500.	310.	J/	850.		U/	1100.
Anthracene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Di-n-butylphthalate (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Fluoranthene (UG/KG)	380.	J/J	1500.	680.	J/	850.		U/	1100.
Pyrene (UG/KG)	370.	J/J	1500.	580.	J/	850.		U/	1100.
Butylbenzylphthalate (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
3,3'-Dichlorobenzidine (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Benzo(a)anthracene (UG/KG)		U/UJ	1500.	250.	J/	850.		U/	1100.
Chrysene (UG/KG)		U/UJ	1500.	300.	J/	850.		U/	1100.
bis(2-ethylhexyl)phthalate (UG/KG)	940.	J/J	1500.	1500.	/	850.		U/	1100.
Di-n-octyl Phthalate (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Benzo(b)fluoranthene (UG/KG)		U/UJ	1500.	430.	J/	850.		U/	1100.
Benzo(k)fluoranthene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Benzo(a)pyrene (UG/KG)		U/UJ	1500.	290.	J/	850.		U/	1100.
Indeno(1,2,3-cd)pyrene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Dibenz(s,h)anthracene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Benzo(g,h,i)perylene (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.
Carbazole (UG/KG)		U/UJ	1500.		U/	850.		U/	1100.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: SVOC

	HD-SDS401-92 03/29/94			HD-SDS501-02 03/29/94			HD-SDS601-02 03/29/94		
Parameter	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL
2,4-Dinitrophenol (UG/KG)	U/	2700.		U/	1200.		U/	1700.	
4-Nitrophenol (UG/KG)	U/	2700.		U/	1200.		U/	1700.	
Dibenzofuran (UG/KG)	U/	1100.		U/	490.		U/	690.	
2,4-Dinitrotoluene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Diethylphthalate (UG/KG)	U/	1100.		U/	490.		U/	690.	
4-Chlorophenyl-phenylether (UG/KG)	U/	1100.		U/	490.		U/	690.	
Fluorene (UG/KG)	U/	1100.		U/	490.		U/	690.	
4-Nitroaniline (UG/KG)	U/	2700.		U/	1200.		U/	1700.	
4,6-Dinitro-2-methylphenol (UG/KG)	U/	2700.		U/	1200.		U/	1700.	
N-nitrosodiphenylamine (UG/KG)	U/	1100.		U/	490.		U/	690.	
4-Bromophenyl-phenylether (UG/KG)	U/	1100.		U/	490.		U/	690.	
Hexachlorobenzene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Pentachlorophenol (UG/KG)	U/	2700.		U/	1200.		U/	1700.	
Phenanthrene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Anthracene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Di-n-butylphthalate (UG/KG)	U/	1100.		U/	490.		U/	690.	
Fluoranthene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Pyrene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Butylbenzylphthalate (UG/KG)	U/	1100.		U/	490.		U/	690.	
3,3'-Dichlorobenzidine (UG/KG)	U/	1100.		U/	490.		U/	690.	
Benzo(a)anthracene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Chrysene (UG/KG)	U/	1100.		U/	490.		U/	690.	
bis(2-ethylhexyl)phthalate (UG/KG)	U/	1100.		U/	490.		U/	690.	
Di-n-octyl Phthalate (UG/KG)	U/	1100.		U/	490.		U/	690.	
Benzo(b)fluoranthene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Benzo(k)fluoranthene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Benzo(a)pyrene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Indeno(1,2,3-cd)pyrene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Dibenz(a,h)anthracene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Benzo(g,h,i)perylene (UG/KG)	U/	1100.		U/	490.		U/	690.	
Carbazole (UG/KG)	U/	1100.		U/	490.		U/	690.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-4

SEDIMENTS PESTICIDES/PCBS

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: PPCB
Generated by: CAW
Date Issued: 03-JUN-94

	HOD-SDPSG1-02 03/29/94			HOD-SDPSG2-02 03/29/94			HOD-SOS101-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)		U/	13.		U/	11.		U/	2.7
beta-BHC (UG/KG)		U/	13.		U/	11.		U/	2.7
delta-BHC (UG/KG)		U/	13.		U/	11.		U/	2.7
gamma-BHC (Lindane) (UG/KG)		U/	13.		U/	11.		U/	2.7
Heptachlor (UG/KG)		U/	13.		U/	11.		U/	2.7
Aldrin (UG/KG)		U/	13.		U/	11.		U/	2.7
Heptachlor epoxide (UG/KG)		U/	13.		U/	11.		U/	2.7
Endosulfan I (UG/KG)		U/	13.		U/	11.		U/	2.7
Dieldrin (UG/KG)		U/	25.		U/	21.		U/	5.2
4,4'-DDE (UG/KG)		U/	25.		U/	21.		U/	5.2
Endrin (UG/KG)		U/	25.		U/	21.		U/	5.2
Endosulfan II (UG/KG)		U/	25.		U/	21.		U/	5.2
4,4'-DDD (UG/KG)		U/	25.		U/	21.		U/	5.2
Endosulfan sulfate (UG/KG)		U/	25.		U/	21.		U/	5.2
4,4'-DDT (UG/KG)		U/	25.		U/	21.		U/	5.2
Methoxychlor (UG/KG)		U/	130.		U/	110.		U/	27.
Endrin ketone (UG/KG)		U/	25.		U/	21.		U/	5.2
alpha-Chlordane (UG/KG)		U/	13.		U/	11.		U/	2.7
gamma-Chlordane (UG/KG)		U/	13.		U/	11.		U/	2.7
Toxaphene (UG/KG)		U/	1300.		U/	1100.		U/	270.
Aroclor-1016 (UG/KG)		U/	250.		U/	210.		U/	52.
Aroclor-1221 (UG/KG)		U/	520.		U/	420.		U/	100.
Aroclor-1232 (UG/KG)		U/	250.		U/	210.		U/	52.
Aroclor-1242 (UG/KG)		U/	250.		U/	210.		U/	52.
Aroclor-1248 (UG/KG)		U/	250.		U/	210.		U/	52.
Aroclor-1254 (UG/KG)		U/	250.		U/	210.		U/	52.
Aroclor-1260 (UG/KG)		U/	250.		U/	210.		U/	52.
Endrin aldehyde (UG/KG)		U/	25.		U/	21.		U/	5.2

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: PPCB

	ID-SDS201-02 03/28/94			ID-SDS301-02 03/28/94			ID-SDS401-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
beta-BHC (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
delta-BHC (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
gamma-BHC (Lindane) (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
Heptachlor (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
Aldrin (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
Heptachlor epoxide (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
Endosulfan I (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
Dieldrin (UG/KG)	U/	15.		U/	8.5		U/	11.	
4,4'-DDE (UG/KG)	U/	15.		U/	8.5		U/	11.	
Endrin (UG/KG)	U/	15.		U/	8.5		U/	11.	
Endosulfan II (UG/KG)	U/	15.		U/	8.5		U/	11.	
4,4'-DDD (UG/KG)	U/	15.		U/	8.5		U/	11.	
Endosulfan sulfate (UG/KG)	U/	15.		U/	8.5		U/	11.	
4,4'-DDT (UG/KG)	U/	15.		U/	8.5		U/	11.	
Methoxychlor (UG/KG)	U/	77.		U/	44.		U/	59.	
Endrin ketone (UG/KG)	U/	15.		U/	8.5		U/	11.	
alpha-Chlordane (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
gamma-Chlordane (UG/KG)	U/	7.7		U/	4.4		U/	5.9	
Toxaphene (UG/KG)	U/	770.		U/	440.		U/	590.	
Aroclor-1016 (UG/KG)	U/	150.		U/	85.		U/	110.	
Aroclor-1221 (UG/KG)	U/	300.		U/	170.		U/	230.	
Aroclor-1232 (UG/KG)	U/	150.		U/	85.		U/	110.	
Aroclor-1242 (UG/KG)	U/	150.		U/	85.		U/	110.	
Aroclor-1248 (UG/KG)	U/	150.		U/	85.		U/	110.	
Aroclor-1254 (UG/KG)	U/	150.		U/	85.		U/	110.	
Aroclor-1260 (UG/KG)	U/	150.		U/	85.		U/	110.	
Endrin aldehyde (UG/KG)	U/	15.		U/	8.5		U/	11.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: PPCB

Parameter	HOD-SDS401-92 03/29/94			HOD-SDS501-02 03/29/94			HOD-SDS601-02 03/29/94		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
beta-BHC (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
delta-BHC (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
gamma-BHC (Lindane) (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
Heptachlor (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
Aldrin (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
Heptachlor epoxide (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
Endosulfan I (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
Dieldrin (UG/KG)	U/	11.		U/	4.9		U/	6.9	
4,4'-DDE (UG/KG)	U/	11.		U/	4.9		U/	6.9	
Endrin (UG/KG)	U/	11.		U/	4.9		U/	6.9	
Endosulfan II (UG/KG)	U/	11.		U/	4.9		U/	6.9	
4,4'-DDD (UG/KG)	U/	11.		U/	4.9		U/	6.9	
Endosulfan sulfate (UG/KG)	U/	11.		U/	4.9		U/	6.9	
4,4'-DDT (UG/KG)	U/	11.		U/	4.9		U/	6.9	
Methoxychlor (UG/KG)	U/	57.		U/	25.		U/	35.	
Endrin ketone (UG/KG)	U/	11.		U/	4.9		U/	6.9	
alpha-Chlordane (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
gamma-Chlordane (UG/KG)	U/	5.7		U/	2.5		U/	3.5	
Toxaphene (UG/KG)	U/	570.		U/	250.		U/	350.	
Aroclor-1016 (UG/KG)	U/	110.		U/	49.		U/	69.	
Aroclor-1221 (UG/KG)	U/	220.		U/	99.		U/	140.	
Aroclor-1232 (UG/KG)	U/	110.		U/	49.		U/	69.	
Aroclor-1242 (UG/KG)	U/	110.		U/	49.		U/	69.	
Aroclor-1248 (UG/KG)	U/	110.		U/	49.		U/	69.	
Aroclor-1254 (UG/KG)	U/	110.		U/	49.		U/	69.	
Aroclor-1260 (UG/KG)	U/	110.		U/	49.		U/	69.	
Endrin aldehyde (UG/KG)	U/	11.		U/	4.9		U/	6.9	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-5

SEDIMENTS METALS

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: MTL SLIND
Generated by: CAW
Date Issued: 03-JUN-94

Parameter	HD-SDPSG1-02 03/29/94			HD-SDPSG2-02 03/29/94			HD-SDS101-02 03/29/94		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Total Solids (%)	13.5	/	0.1	15.8	/	0.1	64.5	/	0.1
Total Organic Carbon (MG/KG)	323500.	/UNVAL	100.	301000.	/UNVAL	100.	44600.	/UNVAL	100.
Aluminum (MG/KG)	9260.	/	25.6	6260.	/	21.9	4380.	/	5.4
Antimony (MG/KG)		U/	40.9		U/	34.9		U/	8.6
Arsenic (MG/KG)	7.2	B/	5.8	6.2	B/	4.9	3.4	/	1.2
Boron (MG/KG)	105.	B/	1.9	89.6	B/	1.6	36.8	B/	0.4
Beryllium (MG/KG)	0.39	B/	0.3	0.29	B/	0.25	0.34	B/	0.06
Cadmium (MG/KG)		U/	2.7		U/	2.3	1.1	B/	0.56
Calcium (MG/KG)	19700.	/	142.	34100.	/	121.	10500.	/	29.7
Chromium, total (MG/KG)	14.6	/	5.2	9.	B/	4.4	8.5	/	1.1
Cobalt (MG/KG)		U/	5.8		U/	4.9	3.3	B/	1.2
Copper (MG/KG)	25.1	B/	2.8	17.6	B/	2.4	12.3	/	0.59
Iron (MG/KG)	16800.	/	21.9	7830.	/	18.7	9290.	/	4.6
Lead (MG/KG)	30.4	N/J	2.4	22.5	N/J	2.	22.5	N/J	0.5
Magnesium (MG/KG)	5320.	BE/J	119.	6930.	E/J	101.	5320.	E/J	24.8
Manganese (MG/KG)	505.	/	2.1	285.	/	1.8	230.	/	0.43
Mercury (MG/KG)	0.3	B/	0.3		U/	0.25	0.16	/	0.06
Nickel (MG/KG)	19.1	B/	9.2	17.1	B/	7.8	8.3	B/	1.9
Potassium (MG/KG)	976.	B/	146.	479.	B/	125.	412.	B/	30.5
Selenium (MG/KG)		UNN/UJ	4.6		UN/UJ	3.9		UNN/UJ	0.96
Silver (MG/KG)		U/	4.9		U/	4.2		U/	1.
Sodium (MG/KG)	407.	B/	111.	527.	B/	95.2	96.9	B/	23.3
Thallium (MG/KG)		UW/	3.9		UW/	3.3		U/	0.81
Vanadium (MG/KG)	25.7	B/	4.7	21.7	B/	4.1	13.9	B/	0.99
Zinc (MG/KG)	72.8	/	7.3	26.6	/	6.2	32.4	/	1.5
Cyanide (MG/KG)		U/	0.37	0.396	B/	0.32		U/	0.08

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: MTL SLIND

	ID-SDS201-02 03/28/94			ID-SDS301-02 03/28/94			ID-SDS401-02 03/29/94		
Parameter	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL
Total Solids (%)	22.1	/	0.1	38.7	/	0.1	29.4	/	0.1
Total Organic Carbon (MG/KG)	165500.	/UNVAL	100.	125000.	/UNVAL	100.	136500.	/UNVAL	100.
Aluminum (MG/KG)	4620.	/	15.6	5650.	/	8.9	10500.	/	11.8
Antimony (MG/KG)		U/	25.		U/	14.3		U/	18.8
Arsenic (MG/KG)	5.9	B/	3.5	5.5	/	2.	3.8	B/	2.6
Barium (MG/KG)	72.	B/	1.2	53.7	B/	0.67	110.	B/	0.88
Beryllium (MG/KG)	0.3	B/	0.18	0.52	B/	0.1	0.57	B/	0.14
Cadmium (MG/KG)	2.	B/	1.6	1.7	B/	0.93	1.9	B/	1.2
Calcium (MG/KG)	37000.	/	86.8	77100.	/	49.6	14600.	/	65.2
Chromium, total (MG/KG)	9.7	/	3.2	12.1	/	1.8	16.5	/	2.4
Cobalt (MG/KG)	5.7	B/	3.5	6.8	B/	2.	6.	B/	2.6
Copper (MG/KG)	17.	B/	1.7	20.5	/	0.98	22.1	/	1.3
Iron (MG/KG)	15300.	/	13.4	17500.	/	7.6	14200.	/	10.1
Lead (MG/KG)	18.1	N/J	1.4	25.8	N/J	0.83	20.4	N/J	1.1
Magnesium (MG/KG)	16100.	E/J	72.5	37000.	E/J	41.4	4600.	E/J	54.5
Manganese (MG/KG)	494.	/	1.3	565.	/	0.72	489.	/	0.94
Mercury (MG/KG)		U/	0.18	0.1	B/	0.1	0.21	B/	0.14
Nickel (MG/KG)	13.3	B/	5.6	15.7	B/	3.2	19.5	B/	4.2
Potassium (MG/KG)	610.	B/	89.	876.	B/	50.8	1110.	B/	66.9
Selenium (MG/KG)		UNN/UJ	2.8		UNN/UJ	1.6		UNN/UJ	2.1
Silver (MG/KG)		U/	3.		U/	1.7		U/	2.2
Sodium (MG/KG)	368.	B/	68.1	207.	B/	38.9	345.	B/	51.2
Thallium (MG/KG)		UN/	2.4		UN/	1.3		U/	1.8
Vanadium (MG/KG)	14.7	B/	2.9	18.7	B/	1.6	32.5	B/	2.2
Zinc (MG/KG)	55.3	/	4.4	93.1	/	2.5	47.2	/	3.3
Cyanide (MG/KG)		U/	0.23	0.17	B/	0.13	0.24	B/	0.17

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD Type: MTL SLIND

	HD-SDS401-92 03/29/94			HD-SDS501-02 03/29/94			HD-SDS601-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Total Solids (X)	30.2	/	0.1	68.	/	0.1	48.1	/	0.1
Total Organic Carbon (MG/KG)	283500.	/UNVAL	100.	31150.	/UNVAL	100.	40450.	/UNVAL	100.
Aluminum (MG/KG)	8180.	/	11.4	4740.	/	5.1	1740.	/	7.2
Antimony (MG/KG)		U/	18.3		U/	8.1		U/	11.5
Arsenic (MG/KG)	4.5	B/	2.6	2.4	B/	1.1		U/	1.6
Barium (MG/KG)	95.7	B/	0.86	36.9	B/	0.38	12.9	B/	0.54
Beryllium (MG/KG)	0.5	B/	0.13	0.38	B/	0.06		U/	0.08
Cadmium (MG/KG)		U/	1.2	1.	B/	0.53		U/	0.75
Calcium (MG/KG)	12600.	/	63.5	8710.	/	28.2	2490.	/	39.9
Chromium, total (MG/KG)	13.6	/	2.3	11.9	/	1.	3.4	B/	1.5
Cobalt (MG/KG)	5.1	B/	2.6	4.	B/	1.1		U/	1.6
Copper (MG/KG)	18.7	/	2.6	11.2	/	0.56	4.	B/	0.79
Iron (MG/KG)	11900.	/	9.8	14200.	/	4.4	2400.	/	6.28
Lead (MG/KG)	24.2	N/J	1.1	15.9	N/J	0.47	13.9	N/J	0.66
Magnesium (MG/KG)	3900.	E/J	53.	4730.	E/J	23.6	1060.	BE/J	33.3
Manganese (MG/KG)	425.	/	0.93	246.	/	0.41	51.3	/	0.58
Mercury (MG/KG)	0.16	B/	0.13	0.06	B/	0.06		U/	0.08
Nickel (MG/KG)	15.9	B/	4.1	11.4	B/	1.8	3.	B/	2.6
Potassium (MG/KG)	854.	B/	65.2	386.	B/	28.9	171.	B/	40.9
Selenium (MG/KG)	2.1	BWN/J	2.1		UWN/UJ	0.91		UWN/UJ	1.3
Silver (MG/KG)		U/	2.2		U/	0.97		U/	1.4
Sodium (MG/KG)	264.	B/	49.8	119.	B/	22.1	104.	B/	31.3
Thallium (MG/KG)		U/	1.7		U/	0.76		U/	1.1
Vanadium (MG/KG)	27.1	B/	2.1	23.2	/	0.94	5.	B/	1.3
Zinc (MG/KG)	42.5	/	3.2	25.3	/	1.4	16.	/	2.
Cyanide (MG/KG)	0.2	B/	0.17		U/	0.07	0.16	B/	0.1

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-6

SEDIMENTS TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

1

Matrix: SD
Generated by: CAW
Date Issued: 03-JUN-94

HD-SDPSG1-02 03/29/94

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LO/DVQ
Hexadecanoic acid (UG/KG)	16000.	NJ/
Unknown (UG/KG)	12000.	J/
Unknown (UG/KG)	9100.	J/
Unknown (UG/KG)	8600.	J/
Unknown acid (UG/KG)	7900.	J/
Unknown alkane (UG/KG)	7700.	J/
Unknown (UG/KG)	6800.	J/
Dodecanamide, N,N-bis(2-hydroxy (UG/KG)	5900.	J/
Unknown alkane (UG/KG)	6300.	J/
Unknown (UG/KG)	5800.	J/
Unknown alkane (UG/KG)	5600.	J/
Unknown (UG/KG)	5300.	J/
Unknown (UG/KG)	4700.	J/
Unknown alkene (UG/KG)	4500.	J/
Unknown (UG/KG)	3600.	J/

HD-SDPSG2-02 03/29/94

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LO/DVQ
Hexadecanoic acid (UG/KG)	10000.	NJ/
Unknown acid (UG/KG)	9500.	J/
Unknown (UG/KG)	9300.	J/
Dodecanamide, N,N-bis(2-hydroxy (UG/KG)	2700.	J/
Unknown (UG/KG)	8200.	J/
Unknown acid (UG/KG)	3500.	J/
Unknown (UG/KG)	1900.	J/
Unknown alkane (UG/KG)	5800.	J/
Unknown (UG/KG)	5100.	J/
Unknown alkane (UG/KG)	5000.	J/
Unknown acid (UG/KG)	2200.	J/
Unknown acid (UG/KG)	4700.	J/
Unknown acid (UG/KG)	2100.	J/
Unknown alkane (UG/KG)	1900.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SD

HD-SDS101-02 03/29/94

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexadecanoic acid (UG/KG)	1700.	NJ/
Unknown alkane (UG/KG)	1300.	J/
Unknown (UG/KG)	1100.	J/
Unknown alkane (UG/KG)	1000.	J/
Unknown (UG/KG)	990.	J/
Unknown acid (UG/KG)	880.	J/
Unknown acid (UG/KG)	870.	J/
Unknown alkane (UG/KG)	790.	J/
Unknown (UG/KG)	450.	J/
Unknown (UG/KG)	520.	J/
Unknown (UG/KG)	510.	J/
Unknown (UG/KG)	510.	J/
Unknown (UG/KG)	510.	J/
Dodecanamide, N,N-bis(2-hydrox (UG/KG)	290.	J/

HD-SDS201-02 03/28/94

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown acid (UG/KG)	12000.	J/
Unknown acid (UG/KG)	10000.	J/
Unknown (UG/KG)	8300.	J/
Unknown alkane (UG/KG)	6500.	J/
Unknown acid (UG/KG)	5600.	J/
Dodecanamide, N,N-bis(2-hydrox (UG/KG)	5000.	J/
Unknown alkane (UG/KG)	5500.	J/
Unknown (UG/KG)	3100.	J/
Unknown (UG/KG)	3000.	J/
Unknown (UG/KG)	2900.	J/
Unknown (UG/KG)	2800.	J/
Unknown (UG/KG)	2700.	J/
Unknown alkane (UG/KG)	2700.	J/
Unknown (UG/KG)	2300.	J/
Unknown (UG/KG)	2300.	J/
Unknown (UG/KG)	2100.	J/
Unknown alkane (UG/KG)	2100.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

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Matrix: SD

HD-SDS301-02 03/28/94

(TBWA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown alkane (UG/KG)	8400.	J/
Unknown alkane (UG/KG)	7400.	J/
Unknown (UG/KG)	6900.	J/
Unknown acid (UG/KG)	5000.	J/
Hexadecanoic acid (UG/KG)	4800.	NJ/
Unknown (UG/KG)	3300.	J/
Dodecanamide, N,N-bis(2-hydroxy (UG/KG)	2900.	J/
Unknown acid (UG/KG)	2700.	J/
Unknown (UG/KG)	2600.	J/
Unknown alkane (UG/KG)	2500.	J/
Unknown alkane (UG/KG)	2400.	J/
Unknown (UG/KG)	2300.	J/
Unknown (UG/KG)	2200.	J/
Unknown (UG/KG)	2000.	J/
Unknown (UG/KG)	1700.	J/
Unknown (UG/KG)	1500.	J/

HD-SDS401-02 03/29/94

(TBWA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexadecanoic acid (UG/KG)	8700.	NJ/
Unknown acid (UG/KG)	5400.	J/
Unknown (UG/KG)	4100.	J/
Unknown alkane (UG/KG)	3400.	J/
Unknown (UG/KG)	3300.	J/
Dodecanamide, N,N-bis(2-hydroxy (UG/KG)	2700.	J/
Unknown acid (UG/KG)	2800.	J/
Unknown (UG/KG)	2800.	J/
Unknown (UG/KG)	2400.	J/
Unknown (UG/KG)	2300.	J/
Unknown acid (UG/KG)	2300.	J/
Unknown (UG/KG)	2200.	J/
Phosphonic acid, dioctadecyl (UG/KG)	1800.	NJ/
Unknown (UG/KG)	1600.	J/
Unknown alkane (UG/KG)	1400.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOO Landfill RI/FS
Antioch, Illinois

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Matrix: SD

HD-SDS401-92 03/29/94

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LO/DVQ
Hexadecanoic acid (UG/KG)	2900.	NJ/
Unknown (UG/KG)	6000.	J/
Unknown acid (UG/KG)	5300.	J/
Unknown acid (UG/KG)	1500.	J/
Unknown (UG/KG)	3100.	J/
Unknown (UG/KG)	2900.	J/
Unknown (UG/KG)	580.	J/
Unknown (UG/KG)	2800.	J/
Unknown alkane (UG/KG)	2300.	J/
Dodecanamide, N,N-bis(2-hydrox (UG/KG)	440.	J/
Unknown (UG/KG)	1600.	J/
Unknown (UG/KG)	300.	J/
Unknown (UG/KG)	460.	J/
Unknown (UG/KG)	450.	J/

HD-SDS501-02 03/29/94

(T3KA) Tentatively-Identified Semi-Volatils

Compound (Units)	Concentration	LO/DVQ
Unknown (UG/KG)	3800.	J/
Unknown (UG/KG)	1800.	J/
Hexadecanoic acid (UG/KG)	670.	NJ/
Unknown (UG/KG)	330.	J/
Unknown acid (UG/KG)	1200.	U/
Unknown (UG/KG)	390.	J/
Unknown (UG/KG)	1100.	J/
Unknown (UG/KG)	690.	J/
Unknown (UG/KG)	690.	J/
Unknown (UG/KG)	640.	J/
Unknown alkane (UG/KG)	810.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

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Matrix: SD

HD-SDS601-02 03/29/94

(TBWA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LO/DVQ
Unknown acid (UG/KG)	4300.	J/
Hexadecanoic acid (UG/KG)	4100.	NJ/
Unknown (UG/KG)	5500.	J/
Dodecanamide, N,N-bis(2-hydroxy (UG/KG)	2000.	J/
Unknown alkane (UG/KG)	3300.	J/
Unknown alkane (UG/KG)	2000.	J/
Unknown alkane (UG/KG)	3100.	J/
Unknown (UG/KG)	2500.	J/
Unknown (UG/KG)	1900.	J/
Unknown alkane (UG/KG)	1800.	J/
Unknown alkane (UG/KG)	1600.	J/
Unknown (UG/KG)	920.	J/
Unknown (UG/KG)	1400.	J/
Phosphonic acid, dioctadecyl (UG/KG)	1400.	NJ/
Unknown (UG/KG)	1400.	J/

APPENDIX P-7

GROUNDWATER VOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC
Generated by: CAW
Date Issued: 03-JUN-94

Parameter	ID-GWFB01-02 03/28/94			ID-GWFB02-02 03/29/94			ID-GWFB03-02 03/30/94		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	ID-GWG11D-02 03/30/94			ID-GWG11S-02 03/30/94			ID-GWTB01-02 03/28/94		
Parameter	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.	18.	/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
IID Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	IID-GWTB02-02 03/29/94			IID-GWTB03-02 03/30/94			IID-GWJS01D-02 03/29/94		
Parameter	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	ID-GWUS01S-02 03/28/94			ID-GWUS01S-92 03/28/94			ID-GWUS03D-02 03/30/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		35.	/	10.
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	/UJ	10.		/UJ	10.		/UJ	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		18.	/	10.
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	ID-GWUS031-02 03/30/94			ID-GWUS03S-02 03/29/94			ID-GWUS04D-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		/UJ	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	ID-GWUS04S-02 03/29/94			ID-GWUS06D-02 03/29/94			ID-GWUS06I-02 03/28/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		/UJ	10.		U/	10.		/UJ	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)	44.	/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropone (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.	1.	J/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	HOD-GWUS06S-02 03/28/94			HOD-GW03D-02 03/29/94			HOD-GW03SB-02 03/28/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
IID Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	HD-GW04S-02 03/30/94			HD-GW05S-02 03/29/94			IID-GW06S-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: GW Type: VOC

	ID-GW06S-92 03/29/94			ID-GW07D-02 03/29/94		
Parameter	CONC	LO/DVQ	RDL	CONC	LO/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.	
1,2-Dichloropropene (UG/L)	U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-8

PRIVATE WATER SUPPLY VOCs

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC
Generated by: CAW
Date Issued: 03-JUN-94

	ID-GWTB04-02 03/31/94			ID-VW03-02 03/31/94			ID-VW04-02 03/31/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	1.		U/	1.		U/	1.
Bromomethane (UG/L)		U/	1.		U/	1.		U/	1.
Vinyl chloride (UG/L)		U/	1.		U/	1.		U/	1.
Chloroethane (UG/L)		U/	1.		U/	1.		U/	1.
Methylene chloride (UG/L)	2.	B/J	2.		B/UJ	2.		B/UJ	8.
Acetone (UG/L)		U/R	5.	11.	J/J	5.	6.	J/J	5.
Carbon disulfide (UG/L)		U/	1.		U/	1.		U/	1.
1,1-Dichloroethene (UG/L)		U/	1.		U/	1.		U/	1.
1,1-Dichloroethane (UG/L)		U/	1.		U/	1.		U/	1.
cis-1,2-Dichloroethene (UG/L)		U/	1.		U/	1.	0.5	J/J	1.
trans-1,2-Dichloroethene (UG/L)		U/	1.		U/	1.		U/	1.
Chloroform (UG/L)		U/	1.		U/	1.		U/	1.
1,2-Dichloroethane (UG/L)		U/	1.	0.7	J/J	1.		U/	1.
2-Butanone (UG/L)		U/R	5.		U/R	5.		U/R	5.
Bromochloromethane (UG/L)		U/	1.		U/	1.		U/	1.
1,1,1-Trichloroethane (UG/L)		U/	1.		U/	1.		U/	1.
Carbon tetrachloride (UG/L)		U/	1.		U/	1.		U/	1.
Bromodichloromethane (UG/L)		U/	1.		U/	1.		U/	1.
1,2-Dichloropropane (UG/L)		U/	1.		U/	1.		U/	1.
cis-1,3-Dichloropropene (UG/L)		U/	1.		U/	1.		U/	1.
Trichloroethene (UG/L)		U/	1.		U/	1.		U/	1.
Dibromochloromethane (UG/L)		U/	1.		U/	1.		U/	1.
1,1,2-Trichloroethane (UG/L)		U/	1.		U/	1.		U/	1.
Benzene (UG/L)		U/	1.		U/	1.		U/	1.
trans-1,3-Dichloropropene (UG/L)		U/	1.		U/	1.		U/	1.
Bromoform (UG/L)		U/	1.		U/	1.		U/	1.
1,2-Dibromoethane (UG/L)		U/	1.		U/	1.		U/	1.
4-Methyl-2-pentanone (UG/L)		U/	5.		U/	5.		U/	5.
2-Hexanone (UG/L)		U/	5.		U/	5.		U/	5.
Tetrachloroethene (UG/L)		U/	1.		U/	1.		U/	1.
1,1,2,2-Tetrachloroethane (UG/L)		U/	1.		U/	1.		U/	1.
Toluene (UG/L)		U/	1.		U/	1.		U/	1.
Chlorobenzene (UG/L)		U/	1.		U/	1.		U/	1.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
I100 Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

	I10-VW04-92 03/31/94			I10-VW05-02 03/31/94		
Parameter	Conc	LO/DVQ	RDL	Conc	LO/DVQ	RDL
Chloromethane (UG/L)		U/	1.		U/	1.
Bromomethane (UG/L)		U/	1.		U/	1.
Vinyl chloride (UG/L)		U/	1.		U/	1.
Chloroethane (UG/L)		U/	1.		U/	1.
Methylene chloride (UG/L)		B/UJ	7.		B/UJ	2.
Acetone (UG/L)		U/R	5.		U/R	5.
Carbon disulfide (UG/L)		U/	1.		U/	1.
1,1-Dichloroethene (UG/L)		U/	1.		U/	1.
1,1-Dichloroethane (UG/L)		U/	1.		U/	1.
cis-1,2-Dichloroethene (UG/L)	0.7	J/	1.		U/	1.
trans-1,2-Dichloroethene (UG/L)		U/	1.		U/	1.
Chloroform (UG/L)	0.5	J/	1.		U/	1.
1,2-Dichloroethane (UG/L)		U/	1.	0.8	J/	1.
2-Butanone (UG/L)		U/R	5.		U/R	5.
Bromochloromethane (UG/L)		U/	1.		U/	1.
1,1,1-Trichloroethane (UG/L)		U/	1.		U/	1.
Carbon tetrachloride (UG/L)		U/	1.		U/	1.
Bromodichloromethane (UG/L)		U/	1.		U/	1.
1,2-Dichloropropane (UG/L)		U/	1.		U/	1.
cis-1,3-Dichloropropene (UG/L)		U/	1.		U/	1.
Trichloroethene (UG/L)		U/	1.		U/	1.
Dibromochloromethane (UG/L)		U/	1.		U/	1.
1,1,2-Trichloroethane (UG/L)		U/	1.		U/	1.
Benzene (UG/L)		U/	1.		U/	1.
trans-1,3-Dichloropropene (UG/L)		U/	1.		U/	1.
Bromoform (UG/L)		U/	1.		U/	1.
1,2-Dibromoethane (UG/L)		U/	1.		U/	1.
4-Methyl-2-pentanone (UG/L)		U/	5.		U/	5.
2-Hexanone (UG/L)		U/	5.		U/	5.
Tetrachloroethene (UG/L)		U/	1.		U/	1.
1,1,2,2-Tetrachloroethane (UG/L)		U/	1.		U/	1.
Toluene (UG/L)		U/	1.		U/	1.
Chlorobenzene (UG/L)		U/	1.		U/	1.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LO/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

	HD-GWTB04-02 03/31/94			HD-VW03-02 03/31/94			HD-VW04-02 03/31/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Ethylbenzene (UG/L)	U/	1.		U/	1.		U/	1.	
Styrene (UG/L)	U/	1.		U/	1.		U/	1.	
Xylenes (total) (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dibromo-3-chloropropane (UG/L)	U/	1.		U/	1.		U/	1.	
1,3-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	
1,4-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	
1,2-Dichlorobenzene (UG/L)	U/	1.		U/	1.		U/	1.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: PW Type: LVOC

HD-VW04-92 03/31/94

HD-VW05-02 03/31/94

Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Ethylbenzene (UG/L)	U/	1.		U/	1.	
Styrene (UG/L)	U/	1.		U/	1.	
Xylenes (total) (UG/L)	U/	1.		U/	1.	
1,2-Dibromo-3-chloropropane (UG/L)	U/	1.		U/	1.	
1,3-Dichlorobenzene (UG/L)	U/	1.		U/	1.	
1,4-Dichlorobenzene (UG/L)	U/	1.		U/	1.	
1,2-Dichlorobenzene (UG/L)	U/	1.		U/	1.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-9

SURFACE WATER VOCs

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: VOC
Generated by: CAW
Date Issued: 03-JUN-94

Parameter	ID-SWF01-02 03/28/94			ID-SWF02-02 03/29/94			ID-SWPSG1-02 03/29/94		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		5.	BJ/	10.	U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: VOC

	HOD-SWPSG2-02 03/29/94			HOD-SWS101-02 03/29/94			HOD-SWS201-02 03/28/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)		U/	10.		U/	10.		U/	10.
Bromomethane (UG/L)		U/	10.		U/	10.		U/	10.
Vinyl chloride (UG/L)		U/	10.		U/	10.		U/	10.
Chloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Methylene chloride (UG/L)		U/	10.		U/	10.		U/	10.
Acetone (UG/L)		U/	10.		U/	10.		U/	10.
Carbon disulfide (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethene (total) (UG/L)		U/	10.		U/	10.		U/	10.
Chloroform (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
2-Butanone (UG/L)		U/	10.		U/	10.		U/	10.
1,1,1-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Carbon tetrachloride (UG/L)		U/	10.		U/	10.		U/	10.
Bromodichloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,2-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
cis-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Trichloroethene (UG/L)		U/	10.		U/	10.		U/	10.
Dibromochloromethane (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2-Trichloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Benzene (UG/L)		U/	10.		U/	10.		U/	10.
trans-1,3-Dichloropropene (UG/L)		U/	10.		U/	10.		U/	10.
Bromoform (UG/L)		U/	10.		U/	10.		U/	10.
4-Methyl-2-pentanone (UG/L)		U/	10.		U/	10.		U/	10.
2-Hexanone (UG/L)		U/	10.		U/	10.		U/	10.
Tetrachloroethene (UG/L)		U/	10.		U/	10.		U/	10.
1,1,2,2-Tetrachloroethane (UG/L)		U/	10.		U/	10.		U/	10.
Toluene (UG/L)		U/	10.		U/	10.		U/	10.
Chlorobenzene (UG/L)		U/	10.		U/	10.		U/	10.
Ethylbenzene (UG/L)		U/	10.		U/	10.		U/	10.
Styrene (UG/L)		U/	10.		U/	10.		U/	10.
Xylenes (total) (UG/L)		U/	10.		U/	10.		U/	10.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: VOC

	ID-SWS301-02 03/28/94			ID-SWS401-02 03/29/94			ID-SWS401-92 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
Bromomethane (UG/L)	U/	10.		U/	10.		U/	10.	
Vinyl chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Methylene chloride (UG/L)	U/	10.		U/	10.		U/	10.	
Acetone (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon disulfide (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethene (total) (UG/L)	U/	10.		U/	10.		U/	10.	
Chloroform (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
2-Butanone (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,1-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Carbon tetrachloride (UG/L)	U/	10.		U/	10.		U/	10.	
Bromodichloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,2-Dichloropropane (UG/L)	U/	10.		U/	10.		U/	10.	
cis-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Trichloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
Dibromochloromethane (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2-Trichloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Benzene (UG/L)	U/	10.		U/	10.		U/	10.	
trans-1,3-Dichloropropene (UG/L)	U/	10.		U/	10.		U/	10.	
Bromoform (UG/L)	U/	10.		U/	10.		U/	10.	
4-Methyl-2-pentanone (UG/L)	U/	10.		U/	10.		U/	10.	
2-Hexanone (UG/L)	U/	10.		U/	10.		U/	10.	
Tetrachloroethene (UG/L)	U/	10.		U/	10.		U/	10.	
1,1,2,2-Tetrachloroethane (UG/L)	U/	10.		U/	10.		U/	10.	
Toluene (UG/L)	U/	10.		U/	10.		U/	10.	
Chlorobenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Ethylbenzene (UG/L)	U/	10.		U/	10.		U/	10.	
Styrene (UG/L)	U/	10.		U/	10.		U/	10.	
Xylenes (total) (UG/L)	U/	10.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
IICD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: VOC

HO-SWS501-02 03/29/94 HO-SWS601-02 03/29/94

Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Chloromethane (UG/L)	U/		10.	U/		10.
Bromomethane (UG/L)	U/		10.	U/		10.
Vinyl chloride (UG/L)	U/		10.	U/		10.
Chloroethane (UG/L)	U/		10.	U/		10.
Methylene chloride (UG/L)	U/		10.	U/		10.
Acetone (UG/L)	U/		10.	U/		10.
Carbon disulfide (UG/L)	U/		10.	U/		10.
1,1-Dichloroethene (UG/L)	U/		10.	U/		10.
1,1-Dichloroethane (UG/L)	U/		10.	U/		10.
1,2-Dichloroethene (total) (UG/L)	U/		10.	U/		10.
Chloroform (UG/L)	U/		10.	U/		10.
1,2-Dichloroethane (UG/L)	U/		10.	U/		10.
2-Butanone (UG/L)	U/		10.	U/		10.
1,1,1-Trichloroethane (UG/L)	U/		10.	U/		10.
Carbon tetrachloride (UG/L)	U/		10.	U/		10.
Bromodichloromethane (UG/L)	U/		10.	U/		10.
1,2-Dichloropropane (UG/L)	U/		10.	U/		10.
cis-1,3-Dichloropropene (UG/L)	U/		10.	U/		10.
Trichloroethene (UG/L)	U/		10.	U/		10.
Dibromochloromethane (UG/L)	U/		10.	U/		10.
1,1,2-Trichloroethane (UG/L)	U/		10.	U/		10.
Benzene (UG/L)	U/		10.	U/		10.
trans-1,3-Dichloropropene (UG/L)	U/		10.	U/		10.
Bromoform (UG/L)	U/		10.	U/		10.
4-Methyl-2-pentanone (UG/L)	U/		10.	U/		10.
2-Hexanone (UG/L)	U/		10.	U/		10.
Tetrachloroethene (UG/L)	U/		10.	U/		10.
1,1,2,2-Tetrachloroethane (UG/L)	U/		10.	U/		10.
Toluene (UG/L)	U/		10.	U/		10.
Chlorobenzene (UG/L)	U/		10.	U/		10.
Ethylbenzene (UG/L)	U/		10.	U/		10.
Styrene (UG/L)	U/		10.	U/		10.
Xylenes (total) (UG/L)	U/		10.	U/		10.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-10

SURFACE WATER SVOCs

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC
Generated by: CAW
Date Issued: 03-JUN-94

Parameter	ID-SWFB01-02 03/28/94			ID-SWFB01-02 03/29/94			ID-SWPSG1-02 03/29/94		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)		U/	12.		U/	11.		U/	11.
bis(2-Chloroethyl) ether (UG/L)		U/	12.		U/	11.		U/	11.
2-Chlorophenol (UG/L)		U/	12.		U/	11.		U/	11.
1,3-Dichlorobenzene (UG/L)		U/	12.		U/	11.		U/	11.
1,4-Dichlorobenzene (UG/L)		U/	12.		U/	11.		U/	11.
1,2-Dichlorobenzene (UG/L)		U/	12.		U/	11.		U/	11.
2-Methylphenol (UG/L)		U/	12.		U/	11.		U/	11.
bis(2-Chloroisopropyl)ether (UG/L)		U/	12.		U/	11.		U/	11.
4-Methylphenol (UG/L)		U/	12.		U/	11.		U/	11.
N-Nitroso-di-n-propylamine (UG/L)		U/	12.		U/	11.		U/	11.
Hexachloroethane (UG/L)		U/	12.		U/	11.		U/	11.
Nitrobenzene (UG/L)		U/	12.		U/	11.		U/	11.
Isophorone (UG/L)		U/	12.		U/	11.		U/	11.
2-Nitrophenol (UG/L)		U/	12.		U/	11.		U/	11.
2,4-Dimethylphenol (UG/L)		U/	12.		U/	11.		U/	11.
bis(2-Chloroethoxy)methane (UG/L)		U/	12.		U/	11.		U/	11.
2,4-Dichlorophenol (UG/L)		U/	12.		U/	11.		U/	11.
1,2,4-Trichlorobenzene (UG/L)		U/	12.		U/	11.		U/	11.
Naphthalene (UG/L)		U/	12.		U/	11.		U/	11.
4-Chloroaniline (UG/L)		U/	12.		U/	11.		U/	11.
Hexachlorobutadiene (UG/L)		U/	12.		U/	11.		U/	11.
4-Chloro-3-methylphenol (UG/L)		U/	12.		U/	11.		U/	11.
2-Methylnaphthalene (UG/L)		U/	12.		U/	11.		U/	11.
Hexachlorocyclopentadiene (UG/L)		U/	12.		U/	11.		U/	11.
2,4,6-Trichlorophenol (UG/L)		U/	12.		U/	11.		U/	11.
2,4,5-Trichlorophenol (UG/L)		U/	29.		U/	28.		U/	27.
2-Choronaphthalene (UG/L)		U/	12.		U/	11.		U/	11.
2-Nitroaniline (UG/L)		U/	29.		U/	28.		U/	27.
Dimethylphthalate (UG/L)		U/	12.		U/	11.		U/	11.
Acenaphthylene (UG/L)		U/	12.		U/	11.		U/	11.
2,6-Dinitrotoluene (UG/L)		U/	12.		U/	11.		U/	11.
3-Nitroaniline (UG/L)		U/	29.		U/	28.		U/	27.
Acenaphthene (UG/L)		U/	12.		U/	11.		U/	11.

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC

	HD-SWPSG2-02 03/29/94			HD-SWS101-02 03/29/94			HD-SWS201-02 03/28/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	11.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	11.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	11.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	11.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	11.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	11.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	11.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	11.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	11.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	11.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	11.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	11.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	11.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	11.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	11.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	11.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	11.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	11.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	11.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	11.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	27.		U/	26.		U/	25.	
2-Chloronaphthalene (UG/L)	U/	11.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	27.		U/	26.		U/	25.	
Dimethylphthalate (UG/L)	U/	11.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	11.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	11.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	27.		U/	26.		U/	25.	
Acenaphthene (UG/L)	U/	11.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC

	ID-SWS301-02 03/28/94			ID-SWS401-02 03/29/94			ID-SWS401-92 03/29/94		
PARAMETER	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	11.		U/	10.		U/	10.	
bis(2-Chloroethyl) ether (UG/L)	U/	11.		U/	10.		U/	10.	
2-Chlorophenol (UG/L)	U/	11.		U/	10.		U/	10.	
1,3-Dichlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
1,4-Dichlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
1,2-Dichlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
2-Methylphenol (UG/L)	U/	11.		U/	10.		U/	10.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	11.		U/	10.		U/	10.	
4-Methylphenol (UG/L)	U/	11.		U/	10.		U/	10.	
N-Nitroso-di-n-propylamine (UG/L)	U/	11.		U/	10.		U/	10.	
Hexachloroethane (UG/L)	U/	11.		U/	10.		U/	10.	
Nitrobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
Isophorone (UG/L)	U/	11.		U/	10.		U/	10.	
2-Nitrophenol (UG/L)	U/	11.		U/	10.		U/	10.	
2,4-Dimethylphenol (UG/L)	U/	11.		U/	10.		U/	10.	
bis(2-Chloroethoxy)methane (UG/L)	U/	11.		U/	10.		U/	10.	
2,4-Dichlorophenol (UG/L)	U/	11.		U/	10.		U/	10.	
1,2,4-Trichlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
Naphthalene (UG/L)	U/	11.		U/	10.		U/	10.	
4-Chloroaniline (UG/L)	U/	11.		U/	10.		U/	10.	
Hexachlorobutadiene (UG/L)	U/	11.		U/	10.		U/	10.	
4-Chloro-3-methylphenol (UG/L)	U/	11.		U/	10.		U/	10.	
2-Methylnaphthalene (UG/L)	U/	11.		U/	10.		U/	10.	
Hexachlorocyclopentadiene (UG/L)	U/	11.		U/	10.		U/	10.	
2,4,6-Trichlorophenol (UG/L)	U/	11.		U/	10.		U/	10.	
2,4,5-Trichlorophenol (UG/L)	U/	27.		U/	26.		U/	25.	
2-Chloronaphthalene (UG/L)	U/	11.		U/	10.		U/	10.	
2-Nitroaniline (UG/L)	U/	27.		U/	26.		U/	25.	
Dimethylphthalate (UG/L)	U/	11.		U/	10.		U/	10.	
Acenaphthylene (UG/L)	U/	11.		U/	10.		U/	10.	
2,6-Dinitrotoluene (UG/L)	U/	11.		U/	10.		U/	10.	
3-Nitroaniline (UG/L)	U/	27.		U/	26.		U/	25.	
Acenaphthene (UG/L)	U/	11.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC

	HD-SWS501-02 03/29/94			HD-SWS601-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Phenol (UG/L)	U/	10.		U/	11.	
bis(2-Chloroethyl) ether (UG/L)	U/	10.		U/	11.	
2-Chlorophenol (UG/L)	U/	10.		U/	11.	
1,3-Dichlorobenzene (UG/L)	U/	10.		U/	11.	
1,4-Dichlorobenzene (UG/L)	U/	10.		U/	11.	
1,2-Dichlorobenzene (UG/L)	U/	10.		U/	11.	
2-Methylphenol (UG/L)	U/	10.		U/	11.	
bis(2-Chloroisopropyl)ether (UG/L)	U/	10.		U/	11.	
4-Methylphenol (UG/L)	U/	10.		U/	11.	
N-Nitroso-di-n-propylamine (UG/L)	U/	10.		U/	11.	
Hexachloroethane (UG/L)	U/	10.		U/	11.	
Nitrobenzene (UG/L)	U/	10.		U/	11.	
Isophorone (UG/L)	U/	10.		U/	11.	
2-Nitrophenol (UG/L)	U/	10.		U/	11.	
2,4-Dimethylphenol (UG/L)	U/	10.		U/	11.	
bis(2-Chloroethoxy)methane (UG/L)	U/	10.		U/	11.	
2,4-Dichlorophenol (UG/L)	U/	10.		U/	11.	
1,2,4-Trichlorobenzene (UG/L)	U/	10.		U/	11.	
Naphthalene (UG/L)	U/	10.		U/	11.	
4-Chloroaniline (UG/L)	U/	10.		U/	11.	
Hexachlorobutadiene (UG/L)	U/	10.		U/	11.	
4-Chloro-3-methylphenol (UG/L)	U/	10.		U/	11.	
2-Methylnaphthalene (UG/L)	U/	10.		U/	11.	
Hexachlorocyclopentadiene (UG/L)	U/	10.		U/	11.	
2,4,6-Trichlorophenol (UG/L)	U/	10.		U/	11.	
2,4,5-Trichlorophenol (UG/L)	U/	26.		U/	26.	
2-Chloronaphthalene (UG/L)	U/	10.		U/	11.	
2-Nitroaniline (UG/L)	U/	26.		U/	26.	
Dimethylphthalate (UG/L)	U/	10.		U/	11.	
Acenaphthylene (UG/L)	U/	10.		U/	11.	
2,6-Dinitrotoluene (UG/L)	U/	10.		U/	11.	
3-Nitroaniline (UG/L)	U/	26.		U/	26.	
Acenaphthene (UG/L)	U/	10.		U/	11.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC

	HD-SWFB01-02 03/28/94			HD-SWFB02-02 03/29/94			HD-SWPSG1-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	29.		U/	28.		U/	27.	
4-Nitrophenol (UG/L)	U/	29.		U/	28.		U/	27.	
Dibenzofuran (UG/L)	U/	12.		U/	11.		U/	11.	
2,4-Dinitrotoluene (UG/L)	U/	12.		U/	11.		U/	11.	
Diethylphthalate (UG/L)	U/	12.		U/	11.		U/	11.	
4-Chlorophenyl-phenylether (UG/L)	U/	12.		U/	11.		U/	11.	
Fluorene (UG/L)	U/	12.		U/	11.		U/	11.	
4-Nitroaniline (UG/L)	U/	29.		U/	28.		U/	27.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	29.		U/	28.		U/	27.	
N-nitrosodiphenylamine (UG/L)	U/	12.		U/	11.		U/	11.	
4-Bromophenyl-phenylether (UG/L)	U/	12.		U/	11.		U/	11.	
Hexachlorobenzene (UG/L)	U/	12.		U/	11.		U/	11.	
Pentachlorophenol (UG/L)	U/	29.		U/	28.		U/	27.	
Phenanthrene (UG/L)	U/	12.		U/	11.		U/	11.	
Anthracene (UG/L)	U/	12.		U/	11.		U/	11.	
Di-n-butylphthalate (UG/L)	U/	12.		U/	11.		U/	11.	
Fluoranthene (UG/L)	U/	12.		U/	11.		U/	11.	
Pyrene (UG/L)	U/	12.		U/	11.		U/	11.	
Butylbenzylphthalate (UG/L)	U/	12.		U/	11.		U/	11.	
3,3'-Dichlorobenzidine (UG/L)	U/	12.		U/	11.		U/	11.	
Benzo(a)anthracene (UG/L)	U/	12.		U/	11.		U/	11.	
Chrysene (UG/L)	U/	12.		U/	11.		U/	11.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	12.		U/	11.		U/	11.	
Di-n-octyl Phthalate (UG/L)	U/	12.		U/	11.		U/	11.	
Benzo(b)fluoranthene (UG/L)	U/	12.		U/	11.		U/	11.	
Benzo(k)fluoranthene (UG/L)	U/	12.		U/	11.		U/	11.	
Benzo(a)pyrene (UG/L)	U/	12.		U/	11.		U/	11.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	12.		U/	11.		U/	11.	
Dibenz(a,h)anthracene (UG/L)	U/	12.		U/	11.		U/	11.	
Benzo(g,h,i)perylene (UG/L)	U/	12.		U/	11.		U/	11.	
Carbazole (UG/L)	U/	12.		U/	11.		U/	11.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC

	ID-SWPSG2-02 03/29/94			ID-SWS101-02 03/29/94			ID-SWS201-02 03/28/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	27.		U/	26.		U/	25.	
4-Nitrophenol (UG/L)	U/	27.		U/	26.		U/	25.	
Dibenzofuran (UG/L)	U/	11.		U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	11.		U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	11.		U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	11.		U/	10.		U/	10.	
Fluorene (UG/L)	U/	11.		U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	27.		U/	26.		U/	25.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	27.		U/	26.		U/	25.	
N-nitrosodiphenylamine (UG/L)	U/	11.		U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	11.		U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	27.		U/	26.		U/	25.	
Phenanthrone (UG/L)	U/	11.		U/	10.		U/	10.	
Anthracene (UG/L)	U/	11.		U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	11.		U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	11.		U/	10.		U/	10.	
Pyrene (UG/L)	U/	11.		U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	11.		U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	11.		U/	10.		U/	10.	
Chrysene (UG/L)	U/	11.		U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	11.		U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	11.		U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	11.		U/	10.		U/	10.	
Dibenzo(a,h)anthracene (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	11.		U/	10.		U/	10.	
Carbazole (UG/L)	U/	11.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT

HOD Landfill RI/FS

Antioch, Illinois

Matrix: SW Type: SVOC

	HOD-SWS301-02 03/28/94			HOD-SWS401-02 03/29/94			HOD-SWS401-92 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	27.		U/	26.		U/	25.	
4-Nitrophenol (UG/L)	U/	27.		U/	26.		U/	25.	
Dibenzofuran (UG/L)	U/	11.		U/	10.		U/	10.	
2,4-Dinitrotoluene (UG/L)	U/	11.		U/	10.		U/	10.	
Diethylphthalate (UG/L)	U/	11.		U/	10.		U/	10.	
4-Chlorophenyl-phenylether (UG/L)	U/	11.		U/	10.		U/	10.	
Fluorene (UG/L)	U/	11.		U/	10.		U/	10.	
4-Nitroaniline (UG/L)	U/	27.		U/	26.		U/	25.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	27.		U/	26.		U/	25.	
N-nitrosodiphenylamine (UG/L)	U/	11.		U/	10.		U/	10.	
4-Bromophenyl-phenylether (UG/L)	U/	11.		U/	10.		U/	10.	
Hexachlorobenzene (UG/L)	U/	11.		U/	10.		U/	10.	
Pentachlorophenol (UG/L)	U/	27.		U/	26.		U/	25.	
Phenanthrene (UG/L)	U/	11.		U/	10.		U/	10.	
Anthracene (UG/L)	U/	11.		U/	10.		U/	10.	
Di-n-butylphthalate (UG/L)	U/	11.		U/	10.		U/	10.	
Fluoranthene (UG/L)	U/	11.		U/	10.		U/	10.	
Pyrene (UG/L)	U/	11.		U/	10.		U/	10.	
Butylbenzylphthalate (UG/L)	U/	11.		U/	10.		U/	10.	
3,3'-Dichlorobenzidine (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(a)anthracene (UG/L)	U/	11.		U/	10.		U/	10.	
Chrysene (UG/L)	U/	11.		U/	10.		U/	10.	
bis(2-ethylhexyl)phthalate (UG/L)	U/	11.		U/	10.		U/	10.	
Di-n-octyl Phthalate (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(b)fluoranthene (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(k)fluoranthene (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(a)pyrene (UG/L)	U/	11.		U/	10.		U/	10.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	11.		U/	10.		U/	10.	
Dibenz(a,h)anthracene (UG/L)	U/	11.		U/	10.		U/	10.	
Benzo(g,h,i)perylene (UG/L)	U/	11.		U/	10.		U/	10.	
Carbazole (UG/L)	U/	11.		U/	10.		U/	10.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: SVOC

	HD-SWS501-02 03/29/94			HD-SWS601-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
2,4-Dinitrophenol (UG/L)	U/	26.		U/	26.	
4-Nitrophenol (UG/L)	U/	26.		U/	26.	
Dibenzofuran (UG/L)	U/	10.		U/	11.	
2,4-Dinitrotoluene (UG/L)	U/	10.		U/	11.	
Diethylphthalate (UG/L)	U/	10.		U/	11.	
4-Chlorophenyl-phenylether (UG/L)	U/	10.		U/	11.	
Fluorene (UG/L)	U/	10.		U/	11.	
4-Nitroaniline (UG/L)	U/	26.		U/	26.	
4,6-Dinitro-2-methylphenol (UG/L)	U/	26.		U/	26.	
N-nitrosodiphenylamine (UG/L)	U/	10.		U/	11.	
4-Bromophenyl-phenylether (UG/L)	U/	10.		U/	11.	
Hexachlorobenzene (UG/L)	U/	10.		U/	11.	
Pentachlorophenol (UG/L)	U/	26.		U/	26.	
Phenanthrene (UG/L)	U/	10.		U/	11.	
Anthracene (UG/L)	U/	10.		U/	11.	
Di-n-butylphthalate (UG/L)	U/	10.		U/	11.	
Fluoranthene (UG/L)	U/	10.		U/	11.	
Pyrene (UG/L)	U/	10.		U/	11.	
Butylbenzylphthalate (UG/L)	U/	10.		U/	11.	
3,3'-Dichlorobenzidine (UG/L)	U/	10.		U/	11.	
Benzo(a)anthracene (UG/L)	U/	10.		U/	11.	
Chrysene (UG/L)	U/	10.		U/	11.	
bis(2-ethylhexyl)phthalate (UG/L)	/U	12.		U/	11.	
Di-n-octyl Phthalate (UG/L)	U/	10.		U/	11.	
Benzo(b)fluoranthene (UG/L)	U/	10.		U/	11.	
Benzo(k)fluoranthene (UG/L)	U/	10.		U/	11.	
Benzo(a)pyrene (UG/L)	U/	10.		U/	11.	
Indeno(1,2,3-cd)pyrene (UG/L)	U/	10.		U/	11.	
Dibenz(a,h)anthracene (UG/L)	U/	10.		U/	11.	
Benzo(g,h,i)perylene (UG/L)	U/	10.		U/	11.	
Carbazole (UG/L)	U/	10.		U/	11.	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-11

SURFACE WATER PESTICIDES/PCBS

ANALYTICAL DATA REPORT

IID Landfill RI/FS

Antioch, Illinois

1

Matrix: SW Type: PPCB
 Generated by: CAW
 Date Issued: 03-JUN-94

	IID-SWFBO1-02 03/28/94			IID-SWFBO2-02 03/29/94			IID-SWPSC1-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.058		U/	0.052		U/	0.052
beta-BHC (UG/L)		U/	0.058		U/	0.052		U/	0.052
delta-BHC (UG/L)		U/	0.058		U/	0.052		U/	0.052
gamma-BHC (Lindane) (UG/L)		U/	0.058		U/	0.052		U/	0.052
Heptachlor (UG/L)		U/	0.058		U/	0.052		U/	0.052
Aldrin (UG/L)		U/	0.058		U/	0.052		U/	0.052
Heptachlor epoxide (UG/L)		U/	0.058		U/	0.052		U/	0.052
Endosulfan I (UG/L)		U/	0.058		U/	0.052		U/	0.052
Dieldrin (UG/L)		U/	0.12		U/	0.1		U/	0.1
4,4'-DDE (UG/L)		U/	0.12		U/	0.1		U/	0.1
Endrin (UG/L)		U/	0.12		U/	0.1		U/	0.1
Endosulfan II (UG/L)		U/	0.12		U/	0.1		U/	0.1
4,4'-DDD (UG/L)		U/	0.12		U/	0.1		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.12		U/	0.1		U/	0.1
4,4'-DDT (UG/L)		U/	0.12		U/	0.1		U/	0.1
Methoxychlor (UG/L)		U/	0.58		U/	0.52		U/	0.52
Endrin ketone (UG/L)		U/	0.12		U/	0.1		U/	0.1
alpha-Chlordane (UG/L)		U/	0.058		U/	0.052		U/	0.052
gamma-Chlordane (UG/L)		U/	0.058		U/	0.052		U/	0.052
Toxaphene (UG/L)		U/	5.8		U/	5.2		U/	5.2
Aroclor-1016 (UG/L)		U/	1.2		U/	1.		U/	1.
Aroclor-1221 (UG/L)		U/	2.3		U/	2.1		U/	2.1
Aroclor-1232 (UG/L)		U/	1.2		U/	1.		U/	1.
Aroclor-1242 (UG/L)		U/	1.2		U/	1.		U/	1.
Aroclor-1248 (UG/L)		U/	1.2		U/	1.		U/	1.
Aroclor-1254 (UG/L)		U/	1.2		U/	1.		U/	1.
Aroclor-1260 (UG/L)		U/	1.2		U/	1.		U/	1.
Endrin aldehyde (UG/L)		U/	0.12		U/	0.1		U/	0.1

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: PPCB

	HD-SWPSG2-02 03/29/94			HD-SWS101-02 03/29/94			HD-SWS201-02 03/28/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.052		U/	0.054		U/	0.05	
beta-BHC (UG/L)	U/	0.052		U/	0.054		U/	0.05	
delta-BHC (UG/L)	U/	0.052		U/	0.054		U/	0.05	
gamma-BHC (Lindane) (UG/L)	U/	0.052		U/	0.054		U/	0.05	
Heptachlor (UG/L)	U/	0.052		U/	0.054		U/	0.05	
Aldrin (UG/L)	U/	0.052		U/	0.054		U/	0.05	
Heptachlor epoxide (UG/L)	U/	0.052		U/	0.054		U/	0.05	
Endosulfan I (UG/L)	U/	0.052		U/	0.054		U/	0.05	
Dieldrin (UG/L)	U/	0.1		U/	0.11		U/	0.1	
4,4'-DDE (UG/L)	U/	0.1		U/	0.11		U/	0.1	
Endrin (UG/L)	U/	0.1		U/	0.11		U/	0.1	
Endosulfan II (UG/L)	U/	0.1		U/	0.11		U/	0.1	
4,4'-DDD (UG/L)	U/	0.1		U/	0.11		U/	0.1	
Endosulfan sulfate (UG/L)	U/	0.1		U/	0.11		U/	0.1	
4,4'-DDT (UG/L)	U/	0.1		U/	0.11		U/	0.1	
Methoxychlor (UG/L)	U/	0.52		U/	0.54		U/	0.5	
Endrin ketone (UG/L)	U/	0.1		U/	0.11		U/	0.1	
alpha-Chlordane (UG/L)	U/	0.052		U/	0.054		U/	0.05	
gamma-Chlordane (UG/L)	U/	0.052		U/	0.054		U/	0.05	
Toxaphene (UG/L)	U/	5.2		U/	5.4		U/	5.	
Aroclor-1016 (UG/L)	U/	1.		U/	1.1		U/	1.	
Aroclor-1221 (UG/L)	U/	2.1		U/	2.2		U/	2.	
Aroclor-1232 (UG/L)	U/	1.		U/	1.1		U/	1.	
Aroclor-1242 (UG/L)	U/	1.		U/	1.1		U/	1.	
Aroclor-1248 (UG/L)	U/	1.		U/	1.1		U/	1.	
Aroclor-1254 (UG/L)	U/	1.		U/	1.1		U/	1.	
Aroclor-1260 (UG/L)	U/	1.		U/	1.1		U/	1.	
Endrin aldehyde (UG/L)	U/	0.1		U/	0.11		U/	0.1	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: PPCB

	HOD-SWS301-02 03/28/94			HOD-SWS401-02 03/29/94			HOD-SWS401-92 03/29/94		
Parameter	Conc	LQ/DVQ	RDL	Conc	LQ/DVQ	RDL	Conc	LQ/DVQ	RDL
alpha-BHC (UG/L)		U/	0.052		U/	0.05		U/	0.05
beta-BHC (UG/L)		U/	0.052		U/	0.05		U/	0.05
delta-BHC (UG/L)		U/	0.052		U/	0.05		U/	0.05
gamma-BHC (Lindane) (UG/L)		U/	0.052		U/	0.05		U/	0.05
Heptachlor (UG/L)		U/	0.052		U/	0.05		U/	0.05
Aldrin (UG/L)		U/	0.052		U/	0.05		U/	0.05
Heptachlor epoxide (UG/L)		U/	0.052		U/	0.05		U/	0.05
Endosulfan I (UG/L)		U/	0.052		U/	0.05		U/	0.05
Dieldrin (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDE (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endrin (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endosulfan II (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDD (UG/L)		U/	0.1		U/	0.1		U/	0.1
Endosulfan sulfate (UG/L)		U/	0.1		U/	0.1		U/	0.1
4,4'-DDT (UG/L)		U/	0.1		U/	0.1		U/	0.1
Methoxychlor (UG/L)		U/	0.52		U/	0.5		U/	0.5
Endrin ketone (UG/L)		U/	0.1		U/	0.1		U/	0.1
alpha-Chlordane (UG/L)		U/	0.052		U/	0.05		U/	0.05
gamma-Chlordane (UG/L)		U/	0.052		U/	0.05		U/	0.05
Toxaphene (UG/L)		U/	5.2		U/	5.		U/	5.
Aroclor-1016 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1221 (UG/L)		U/	2.1		U/	2.		U/	2.
Aroclor-1232 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1242 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1248 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1254 (UG/L)		U/	1.		U/	1.		U/	1.
Aroclor-1260 (UG/L)		U/	1.		U/	1.		U/	1.
Endrin aldehyde (UG/L)		U/	0.1		U/	0.1		U/	0.1

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: PPCB

	HD-SWS501-02 03/29/94			HD-SWS601-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
alpha-BHC (UG/L)	U/	0.051		U/	0.052	
beta-BHC (UG/L)	U/	0.051		U/	0.052	
delta-BHC (UG/L)	U/	0.051		U/	0.052	
gamma-BHC (Lindane) (UG/L)	U/	0.051		U/	0.052	
Heptachlor (UG/L)	U/	0.051		U/	0.052	
Aldrin (UG/L)	U/	0.051		U/	0.052	
Heptachlor epoxide (UG/L)	U/	0.051		U/	0.052	
Endosulfan I (UG/L)	U/	0.051		U/	0.052	
Dieldrin (UG/L)	U/	0.1		U/	0.1	
4,4'-DDE (UG/L)	U/	0.1		U/	0.1	
Endrin (UG/L)	U/	0.1		U/	0.1	
Endosulfan II (UG/L)	U/	0.1		U/	0.1	
4,4'-DDD (UG/L)	U/	0.1		U/	0.1	
Endosulfan sulfate (UG/L)	U/	0.1		U/	0.1	
4,4'-DDT (UG/L)	U/	0.1		U/	0.1	
Methoxychlor (UG/L)	U/	0.51		U/	0.52	
Endrin ketone (UG/L)	U/	0.1		U/	0.1	
alpha-Chlordane (UG/L)	U/	0.051		U/	0.052	
gamma-Chlordane (UG/L)	U/	0.051		U/	0.052	
Toxaphene (UG/L)	U/	5.1		U/	5.2	
Aroclor-1016 (UG/L)	U/	1.		U/	1.	
Aroclor-1221 (UG/L)	U/	2.		U/	2.1	
Aroclor-1232 (UG/L)	U/	1.		U/	1.	
Aroclor-1242 (UG/L)	U/	1.		U/	1.	
Aroclor-1248 (UG/L)	U/	1.		U/	1.	
Aroclor-1254 (UG/L)	U/	1.		U/	1.	
Aroclor-1260 (UG/L)	U/	1.		U/	1.	
Endrin aldehyde (UG/L)	U/	0.1		U/	0.1	

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-12

SURFACE WATER INDICATORS AND METALS

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: MTL
Generated by: CAW
Date Issued: 03-JUN-94

	HD-SWFB01-02 03/28/94			HD-SWFB02-02 03/29/94			HD-SWPSG1-02 03/29/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		B/U	59.		B/U	84.9		B/U	140.
Antimony (UG/L)		U/	27.6		U/	27.6		U/	27.6
Arsenic (UG/L)		U/	3.9		U/	3.9		U/	3.9
Barium (UG/L)		U/	1.3		U/	1.3	17.8	B/	1.3
Beryllium (UG/L)		U/	0.2		U/	0.2		U/	0.2
Cadmium (UG/L)		U/	1.8		U/	1.8		U/	1.8
Calcium (UG/L)		U/	95.9		U/	95.9	46700.	/	95.9
Chromium, total (UG/L)		U/	3.5		U/	3.5		U/	3.5
Cobalt (UG/L)		U/	3.9		U/	3.9		U/	3.9
Copper (UG/L)		U/	1.9		U/	1.9		U/	1.9
Iron (UG/L)	20.5	B/	14.8	31.7	B/	14.8		/U	125.
Lead (UG/L)		UN/UJ	1.6		UN/UJ	1.6		UNU/UJ	1.6
Magnesium (UG/L)		U/	80.1		U/	80.1	26200.	/	80.1
Manganese (UG/L)		U/	1.4		U/	1.4	105.	/	1.4
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		U/	6.2		U/	6.2		U/	6.2
Potassium (UG/L)		U/	98.4		U/	98.4	2620.	B/	98.4
Selenium (UG/L)		U/	3.1		U/	3.1		U/	3.1
Silver (UG/L)		U/	3.3		U/	3.3		U/	3.3
Sodium (UG/L)	304.	B/	75.2	312.	B/	75.2	26300.	/	75.2
Thallium (UG/L)		U/	2.6		U/	2.6		U/	2.6
Vanadium (UG/L)		U/	3.2		U/	3.2		U/	3.2
Zinc (UG/L)	6.1	B/	4.9	6.7	B/	4.9		B/U	5.9
Cyanide (UG/L)		U/UJ	0.97		U/UJ	0.97		U/UJ	0.97

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: MTL

	HD-SWPSG2-02 03/29/94			HD-SWS101-02 03/29/94			HD-SWS201-02 03/28/94		
Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		B/U	171.		B/U	117.		B/U	146.
Antimony (UG/L)		U/	27.6		U/	27.6		U/	27.6
Arsenic (UG/L)		U/	3.9		U/	3.9		U/	3.9
Barium (UG/L)	22.2	B/	1.3	17.	B/	1.3	20.9	B/	1.3
Beryllium (UG/L)		U/	0.2		U/	0.2		U/	0.2
Cadmium (UG/L)		U/	1.8		U/	1.8		U/	1.8
Calcium (UG/L)	49000.	/	95.9	45100.	/	95.9	46700.	/	95.9
Chromium, total (UG/L)		U/	3.5		U/	3.5		U/	3.5
Cobalt (UG/L)		U/	3.9		U/	3.9		U/	3.9
Copper (UG/L)		U/	1.9		U/	1.9		U/	1.9
Iron (UG/L)	190.	/	14.8		B/U	80.3	192.	U/	14.8
Lead (UG/L)		UN/UJ	1.6		UNH/UJ	1.6		UN/UJ	1.6
Magnesium (UG/L)	25500.	/	80.1	25400.	/	80.1	24500.	/	80.1
Manganese (UG/L)	38.2	/	1.4	127.	/	1.4	39.	/	1.4
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		U/	6.2		U/	6.2		U/	6.2
Potassium (UG/L)	2760.	B/	98.4	2590.	B/	98.4	2550.	B/	98.4
Selenium (UG/L)		U/	3.1		U/	3.1		U/	3.1
Silver (UG/L)		U/	3.3		U/	3.3		U/	3.3
Sodium (UG/L)	34200.	/	75.2	25500.	/	75.2	32200.	/	75.2
Thallium (UG/L)		U/	2.6		U/	2.6		U/	2.6
Vanadium (UG/L)		U/	3.2		U/	3.2		U/	3.2
Zinc (UG/L)		B/U	6.7		U/	4.9		B/U	5.2
Cyanide (UG/L)		U/UJ	0.97		U/UJ	0.97		U/UJ	0.97

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

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ANALYTICAL DATA REPORT
HOD Landfill RI/FS
Antioch, Illinois

Matrix: SW Type: MTL

Parameter	ID-SWS301-02 03/28/94			ID-SWS401-02 03/29/94			ID-SWS401-92 03/29/94		
	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		B/U	175.		B/U	152.		B/U	162.
Antimony (UG/L)		U/	27.6		U/	27.6		U/	27.6
Arsenic (UG/L)		U/	3.9		U/	3.9		U/	3.9
Barium (UG/L)	22.6	B/	1.3	21.5	B/	1.3	21.6	B/	1.3
Beryllium (UG/L)		U/	0.2		U/	0.2		U/	0.2
Cadmium (UG/L)		U/	1.8		U/	1.8		U/	1.8
Calcium (UG/L)	48800.	/	95.9	46900.	/	95.9	48100.	/	95.9
Chromium, total (UG/L)		U/	3.5		U/	3.5		U/	3.5
Cobalt (UG/L)		U/	3.9		U/	3.9		U/	3.9
Copper (UG/L)		U/	1.9		U/	1.9		U/	1.9
Iron (UG/L)	193.	/	14.8		/U	144.	163.	/	14.8
Lead (UG/L)		UNN/UJ	1.6		UN/UJ	1.6		UNN/UJ	1.6
Magnesium (UG/L)	25500.	/	80.1	24600.	/	80.1	24900.	/	80.1
Manganese (UG/L)	39.6	/	1.4	24.2	/	1.4	25.3	/	1.4
Mercury (UG/L)		U/	0.1		U/	0.1		U/	0.1
Nickel (UG/L)		U/	6.2		U/	6.2		U/	6.2
Potassium (UG/L)	2620.	B/	98.4	2580.	B/	98.4	2670.	B/	98.4
Selenium (UG/L)		U/	3.1		U/	3.1		U/	3.1
Silver (UG/L)		U/	3.3		U/	3.3		U/	3.3
Sodium (UG/L)	33900.	/	75.2	35200.	/	75.2	35600.	/	75.2
Thallium (UG/L)		U/	2.6		U/	2.6		U/	2.6
Vanadium (UG/L)		U/	3.2		U/	3.2		U/	3.2
Zinc (UG/L)		B/U	5.		B/U	5.		B/U	5.3
Cyanide (UG/L)		B/UJ	3.		U/UJ	0.97		U/UJ	0.97

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

ANALYTICAL DATA REPORT

HOD Landfill RI/FS

Antioch, Illinois

Matrix: SW Type: MTL

HD-SWS501-02 03/29/94

HD-SWS601-02 03/29/94

Parameter	CONC	LQ/DVQ	RDL	CONC	LQ/DVQ	RDL
Aluminum (UG/L)		B/U	139.		B/U	136.
Antimony (UG/L)		U/	27.6		U/	27.6
Arsenic (UG/L)		UW/	3.9		UW/	3.9
Barium (UG/L)	16.5	B/	1.3	16.8	B/	1.3
Beryllium (UG/L)		U/	0.2		U/	0.2
Cadmium (UG/L)		U/	1.8		U/	1.8
Calcium (UG/L)	44400.	/	95.9	42400.	/	95.9
Chromium, total (UG/L)		U/	3.5		U/	3.5
Cobalt (UG/L)		U/	3.9		U/	3.9
Copper (UG/L)		U/	1.9		U/	1.9
Iron (UG/L)		B/U	76.7		B/U	72.5
Lead (UG/L)		UWN/UJ	1.6		UN/UJ	1.6
Magnesium (UG/L)	25100.	/	80.1	24200.	/	80.1
Manganese (UG/L)	129.	/	1.4	130.	/	1.4
Mercury (UG/L)		U/	0.1		U/	0.1
Nickel (UG/L)		U/	6.2		U/	6.2
Potassium (UG/L)	2600.	B/	98.4	2430.	B/	98.4
Selenium (UG/L)		U/	3.1		U/	3.1
Silver (UG/L)		U/	3.3		U/	3.3
Sodium (UG/L)	24900.	/	75.2	24100.	/	75.2
Thallium (UG/L)		U/	2.6		U/	2.6
Vanadium (UG/L)		U/	3.2		U/	3.2
Zinc (UG/L)		U/	4.9		U/	4.9
Cyanide (UG/L)		U/UJ	0.97		U/UJ	0.97

Note: In the sample ID: "-92" indicates a field duplicate, "TB" indicates a Trip Blank, and "FB" indicates a Field Blank.

Conc = Concentration of parameter detected in the sample, LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier, RDL = Reported Detection Limit.

APPENDIX P-13

SURFACE WATER TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

1

Matrix: SW
Generated by: CAW
Date Issued: 03-JUN-94

HD-SWFB01-02 03/28/94

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Sulfur, mol. (S8) (UG/L)	28.	J/

HD-SWFB02-02 03/29/94

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	8.	BJ/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
HOD Landfill RI/FS
Antioch, Illinois

1

Matrix: GW
Generated by: CAW
Date Issued: 03-JUN-94

HD-GWTB01-02 03/28/94

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
-----	-----	-----
Unknown (UG/L)	3.	BJ/

HD-GWTB02-02 03/29/94

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
-----	-----	-----
Unknown (UG/L)	11.	BJ/

HD-GWTB03-02 03/30/94

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
-----	-----	-----
Unknown (UG/L)	5.	BJ/

HD-GWW05S-02 03/29/94

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
-----	-----	-----
Ethyl ether (UG/L)	26.	J/
Unknown (UG/L)	7.	J/

(

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Q



APPENDIX Q

HELP MODEL RESULTS

(

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HOD NEW
ANTIOCH, ILLINOIS
AUG 12, 1994

GOOD GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	28.00 INCHES
POROSITY	=	0.4790 VOL/VOL
FIELD CAPACITY	=	0.3714 VOL/VOL
WILTING POINT	=	0.2505 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3714 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000104999992 CM/SEC

LAYER 2

BARRIER SOIL LINER

THICKNESS	=	43.00 INCHES
POROSITY	=	0.4300 VOL/VOL
FIELD CAPACITY	=	0.3663 VOL/VOL
WILTING POINT	=	0.2802 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4300 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000000100000 CM/SEC

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	85.79
TOTAL AREA OF COVER	=	849420. SQ FT
EVAPORATIVE ZONE DEPTH	=	28.00 INCHES
UPPER LIMIT VEG. STORAGE	=	13.4120 INCHES
INITIAL VEG. STORAGE	=	10.7972 INCHES
INITIAL SNOW WATER CONTENT	=	0.0000 INCHES
INITIAL TOTAL WATER STORAGE IN SOIL AND WASTE LAYERS	=	28.8892 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND
SOLAR RADIATION FOR CHICAGO ILLINOIS

MAXIMUM LEAF AREA INDEX = 3.80
START OF GROWING SEASON (JULIAN DATE) = 128
END OF GROWING SEASON (JULIAN DATE) = 282

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
21.40	26.00	36.00	48.80	59.10	68.60
73.00	71.90	64.70	53.50	39.80	27.70

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 20

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	1.88 4.98	1.32 3.87	2.41 3.05	3.91 3.01	3.22 2.09	3.67 1.95
STD. DEVIATIONS	0.92 3.34	0.71 1.87	1.26 1.99	1.48 2.05	1.34 0.72	1.82 0.64
RUNOFF						
TOTALS	0.198 0.440	0.349 0.206	0.230 0.161	0.424 0.264	0.210 0.102	0.196 0.077
STD. DEVIATIONS	0.438 0.682	0.732 0.240	0.375 0.323	0.581 0.478	0.475 0.277	0.216 0.198
EVAPOTRANSPIRATION						
TOTALS	0.560 4.476	1.026 4.016	2.186 2.592	3.443 1.732	3.439 0.923	6.440 0.662
STD. DEVIATIONS	0.141 2.598	0.248 1.280	0.326 1.051	0.516 0.752	1.251 0.304	0.715 0.154
PERCOLATION FROM LAYER 2						
TOTALS	0.0934 0.0171	0.1176 0.0037	0.1479 0.0036	0.1448 0.0097	0.1452 0.0324	0.1079 0.0658
STD. DEVIATIONS	0.0641 0.0321	0.0398 0.0167	0.0193 0.0159	0.0143 0.0370	0.0123 0.0537	0.0221 0.0691

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 20

	(INCHES)	(CU. FT.)	PERCENT
PRECIPITATION	35.37 (5.654)	2503488.	100.00
RUNOFF	2.857 (1.707)	202246.	8.08
EVAPOTRANSPIRATION	31.495 (4.488)	2229397.	89.05
PERCOLATION FROM LAYER 2	0.8892 (0.1823)	62941.	2.51
CHANGE IN WATER STORAGE	0.126 (2.216)	8903.	0.36

PEAK DAILY VALUES FOR YEARS 1 THROUGH 20

	(INCHES)	(CU. FT.)
PRECIPITATION	3.51	248455.3
RUNOFF	2.265	160302.8
PERCOLATION FROM LAYER 2	0.0056	397.8
HEAD ON LAYER 2	28.1	
SNOW WATER	2.47	175034.5
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.4790
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.2502

FINAL WATER STORAGE AT END OF YEAR 20

LAYER	(INCHES)	(VOL/VOL)
1	13.37	0.4775
2	18.49	0.4300
SNOW WATER	0.00	

HOD OLD SOUTH
ANTIOCH, ILLINOIS
AUG 12, 1994

GOOD GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	36.00 INCHES
POROSITY	=	0.4790 VOL/VOL
FIELD CAPACITY	=	0.3714 VOL/VOL
WILTING POINT	=	0.2505 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3714 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000104999992 CM/SEC

LAYER 2

BARRIER SOIL LINER

THICKNESS	=	12.00 INCHES
POROSITY	=	0.4300 VOL/VOL
FIELD CAPACITY	=	0.3663 VOL/VOL
WILTING POINT	=	0.2802 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4300 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000000100000 CM/SEC

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	85.79
TOTAL AREA OF COVER	=	239580. SQ FT
EVAPORATIVE ZONE DEPTH	=	28.00 INCHES
UPPER LIMIT VEG. STORAGE	=	13.4120 INCHES
INITIAL VEG. STORAGE	=	10.7737 INCHES
INITIAL SNOW WATER CONTENT	=	0.0000 INCHES
INITIAL TOTAL WATER STORAGE IN SOIL AND WASTE LAYERS	=	18.5304 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND
SOLAR RADIATION FOR CHICAGO ILLINOIS

MAXIMUM LEAF AREA INDEX = 3.80
START OF GROWING SEASON (JULIAN DATE) = 128
END OF GROWING SEASON (JULIAN DATE) = 282

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
21.40	26.00	36.00	48.80	59.10	68.60
73.00	71.90	64.70	53.50	39.80	27.70

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 20

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	1.88	1.32	2.41	3.91	3.22	3.67
	4.98	3.87	3.05	3.01	2.09	1.95
STD. DEVIATIONS						
TOTALS	0.92	0.71	1.26	1.48	1.34	1.82
	3.34	1.87	1.99	2.05	0.72	0.64
RUNOFF						
TOTALS	0.138	0.163	0.082	0.266	0.162	0.176
	0.438	0.206	0.156	0.221	0.056	0.045
STD. DEVIATIONS	0.294	0.474	0.143	0.432	0.370	0.196
	0.678	0.240	0.304	0.423	0.134	0.127
EVAPOTRANSPIRATION						
TOTALS	0.561	1.027	2.193	3.453	3.475	5.900
	4.283	3.980	2.596	1.740	0.926	0.664
STD. DEVIATIONS	0.142	0.248	0.318	0.517	1.265	0.909
	2.466	1.262	1.054	0.746	0.305	0.154
PERCOLATION FROM LAYER 2						
TOTALS	0.1616	0.2034	0.2710	0.2776	0.2775	0.2130
	0.1648	0.1505	0.1374	0.1385	0.1389	0.1607
STD. DEVIATIONS	0.1197	0.1064	0.0979	0.0736	0.0676	0.0412
	0.0163	0.0125	0.0108	0.0613	0.0823	0.1046

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 20

	(INCHES)	(CU. FT.)	PERCENT
PRECIPITATION	35.37 (5.654)	706112.	100.00
RUNOFF	2.109 (1.199)	42114.	5.96
EVAPOTRANSPIRATION	30.798 (4.626)	614881.	87.08
PERCOLATION FROM LAYER 2	2.2950 (0.4892)	45819.	6.49
CHANGE IN WATER STORAGE	0.165 (2.453)	3298.	0.47

PEAK DAILY VALUES FOR YEARS 1 THROUGH 20

	(INCHES)	(CU. FT.)
PRECIPITATION	3.51	70077.1
RUNOFF	2.258	45089.1
PERCOLATION FROM LAYER 2	0.0136	271.8
HEAD ON LAYER 2	36.1	
SNOW WATER	2.47	49348.7
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.4790
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.2502

FINAL WATER STORAGE AT END OF YEAR 20

LAYER	(INCHES)	(VOL/VOL)
1	17.11	0.4753
2	5.16	0.4300
SNOW WATER	0.00	

HOD
OLD NORTH
AUG 12, 1994

GOOD GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	28.00 INCHES
POROSITY	=	0.4790 VOL/VOL
FIELD CAPACITY	=	0.3714 VOL/VOL
WILTING POINT	=	0.2505 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3714 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000104999992 CM/SEC

LAYER 2

BARRIER SOIL LINER

THICKNESS	=	7.60 INCHES
POROSITY	=	0.4300 VOL/VOL
FIELD CAPACITY	=	0.3663 VOL/VOL
WILTING POINT	=	0.2802 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4300 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000000100000 CM/SEC

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	85.79
TOTAL AREA OF COVER	=	522720. SQ FT
EVAPORATIVE ZONE DEPTH	=	28.00 INCHES
UPPER LIMIT VEG. STORAGE	=	13.4120 INCHES
INITIAL VEG. STORAGE	=	10.7933 INCHES
INITIAL SNOW WATER CONTENT	=	0.0000 INCHES
INITIAL TOTAL WATER STORAGE IN SOIL AND WASTE LAYERS	=	13.6672 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND
SOLAR RADIATION FOR CHICAGO ILLINOIS

MAXIMUM LEAF AREA INDEX = 3.80
START OF GROWING SEASON (JULIAN DATE) = 128
END OF GROWING SEASON (JULIAN DATE) = 282

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
21.40	26.00	36.00	48.80	59.10	68.60
73.00	71.90	64.70	53.50	39.80	27.70

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 20

JAN/JUL FEB/AUG MAR/SEP APR/OCT MAY/NOV JUN/DEC

PRECIPITATION

TOTALS	1.88	1.32	2.41	3.91	3.22	3.67
	4.98	3.87	3.05	3.01	2.09	1.95
STD. DEVIATIONS	0.92	0.71	1.26	1.48	1.34	1.82
	3.34	1.87	1.99	2.05	0.72	0.64

RUNOFF

TOTALS	0.157	0.242	0.133	0.305	0.181	0.178
	0.438	0.206	0.160	0.255	0.077	0.046
STD. DEVIATIONS	0.333	0.603	0.246	0.483	0.435	0.195
	0.678	0.240	0.321	0.461	0.210	0.115

EVAPOTRANSPIRATION

TOTALS	0.560	1.026	2.195	3.446	3.462	6.135
	4.340	3.984	2.595	1.740	0.924	0.663
STD. DEVIATIONS	0.142	0.248	0.316	0.524	1.266	0.829
	2.489	1.267	1.054	0.748	0.305	0.154

PERCOLATION FROM LAYER 2

TOTALS	0.1860	0.2518	0.3259	0.3204	0.2982	0.1656
	0.0156	0.0018	0.0084	0.0246	0.0641	0.1354
STD. DEVIATIONS	0.1575	0.1260	0.1074	0.0820	0.0714	0.0608
	0.0357	0.0081	0.0374	0.0970	0.1303	0.1661

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 20

	(INCHES)	(CU. FT.)	PERCENT
PRECIPITATION	35.37 (5.654)	1540608.	100.00
RUNOFF	2.379 (1.394)	103635.	6.73
EVAPOTRANSPIRATION	31.072 (4.590)	1353489.	87.85
PERCOLATION FROM LAYER 2	1.7977 (0.5132)	78310.	5.08
CHANGE IN WATER STORAGE	0.119 (2.129)	5174.	0.34

PEAK DAILY VALUES FOR YEARS 1 THROUGH 20

	(INCHES)	(CU. FT.)
PRECIPITATION	3.51	152895.6
RUNOFF	2.258	98372.9
PERCOLATION FROM LAYER 2	0.0160	694.8
HEAD ON LAYER 2	28.1	
SNOW WATER	2.47	107698.4
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.4790
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.2502

FINAL WATER STORAGE AT END OF YEAR 20

LAYER	(INCHES)	(VOL/VOL)
1	13.23	0.4723
2	3.27	0.4300
SNOW WATER	0.00	

R



APPENDIX R

CITED REFERENCE ON CARBON ISOTOPE STUDIES (BAEDECKER AND BACK, 1979)

Hydrogeological Processes and Chemical Reactions at a Landfill

by Mary Jo Baedecker and William Back²

ABSTRACT

Chemical and isotopic analyses were made of water from wells in and downgradient from a landfill to determine chemical and isotopic effects of generation and migration of leachate on ground water. The distribution and wide concentration range of oxygen and methane permit the delineation of an anaerobic zone, a regional oxygenated zone and an intermediate zone. The ratio of reduced nitrogen to nitrate indicates location of reducing fronts as the leachate migrates. The pH of the native ground water is low (<5.0) primarily because of the low pH of rainfall and the lack of calcareous or other soluble minerals in the aquifer material. The pH is higher (~6.6) in the leachate because of generation of carbon dioxide, ammonia, and methane. The native ground water has a low TDS (80 mg/l) while the leachate has an average TDS of 2800 mg/l and is primarily a NaHCO₃ type water. Sulfate concentrations are extremely low and H₂S was not detected.

We suggest that a major source of cations may be their exchange from the clays by the ammonium generated in the leachate. High concentrations of Fe and Mn are attributed to a source in the refuse but more important to reduction of oxide cements and coatings resulting from degradation of organic matter. The main source of bicarbonate is from organic degradation with minimal CO₂ from the soil zone. At one landfill site 52% of the total alkalinity is attributed to organic compounds, mainly organic acid anions. The δ¹³C of bicarbonate in the leachate is exceedingly heavy (+18.40‰) which results from fractionation during the formation of methane. The 10 per mil deuterium enrichment of water may be due to decomposition of deuterium-enriched compounds and bacterial processes that preferentially consume the lighter hydrogen isotope.

INTRODUCTION

It has been recognized that many inorganic-chemical reactions are controlled largely by the presence of organic compounds. Disposal of liquid and solid waste materials in landfills creates such an environment where organic compounds are an important part of the geochemical system. The principal reactions and processes that may occur are biological decay, precipitation and dissolution of inorganic constituents, sorption of chemical constituents, leaching of sediments, ion exchange, generation and diffusion of gases and movement of dissolved materials.

The purpose of this study is to understand the chemical reactions that occur in a highly reducing environment and their effect on the ground-water chemistry. A landfill provides a suitable environment in which to study the interrelation of organic compounds and inorganic reactions because the extremely high concentration of organic compounds in leachate makes it possible to identify the reactions.

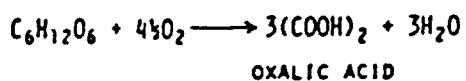
Decomposition of organic materials in ground water is largely through biological activity. Under anaerobic conditions many intermediate organic compounds are formed that affect the ground-water chemistry more profoundly than do the unaltered compounds originally deposited. Effects of microbial degradation on organic compounds, using glucose as an example, are demonstrated in a simplified scheme in Figure 1. Complete oxidation of glucose yields CO₂ and H₂O, whereas absence of free oxygen permits fermentation reactions that produce a variety of end products. Glucose, for example, can dissimilate by a series of enzymatic reactions

²U.S. Geological Survey, National Center 432, Reston, Virginia 22092.

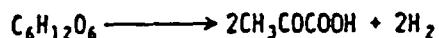
Discussion open until March 1, 1980.

MICROBIAL DEGRADATION

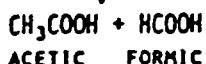
RESPIRATION



FERMENTATION



PYRUVIC ACID



ACETIC
ACID

FORMIC
ACID



Fig. 1. Simplified reaction sequence for decomposition of glucose under oxidizing and anoxic conditions. H_2A = any hydrogen donor, i.e., hydrogen gas, fatty acids, alcohols.

to yield pyruvic acid which subsequently can be used as a substrate to form acetic and formic acids. Other organic compounds such as fatty acids, amino acids, and carbohydrates degrade by similar reactions and upon complete dissimilation yield as end products CO_2 , CH_4 , NH_3 , and in some cases H_2S and H_2 (Langmuir, 1972). Hydrogen is seldom detected in environments of anaerobic decay, especially if fatty acids are produced. Any hydrogen gas formed will be utilized immediately by methane producers (Toerien and Hattingh, 1969). Although controls on these reactions are not well understood, oxygen deficiency and the type and availability of organic material are probably the most important controls on biological activity in subsurface environments.

Nitrogen- and carbon-containing compounds are of particular importance in understanding the geochemical system. One of the major problems is to determine the role and fate of CO_2 and HCO_3^- ; and to evaluate the relative significance of their several sources such as soil gas, solution of calcareous material, and CO_2 produced by organic decomposition.

HYDROLOGIC SETTING

The Army Creek landfill near Wilmington, Delaware covers about 60 acres and consists essentially of solid and liquid industrial waste and

municipal refuse. These wastes were deposited during 1960 to 1968 in an abandoned quarry from which twenty to thirty feet of Tertiary sand and gravel (Columbia Group, Pleistocene by Jordan, 1976) had been removed. The sand was removed from beneath the water table with a drag line and in some places red clay of the underlying Potomac Group was probably removed (Apgar, 1975, 1976). Poorly compacted refuse was put into standing water and loss of the clay layer of tighter permeability permitted migration of leachate into the aquifer.

Approximately 3,500 ft (1,066 m) south and east of the landfill two major well fields were developed in the 1960's to produce water from the Potomac formation from depths of 150 to 200 ft (46 to 61 m). In 1973, discovery that leachate from the landfill was moving into the aquifer led to installation of a series of recovery wells to pump contaminants and to reverse the flow direction of leachate away from supply wells. These recovery wells discharge the landfill effluent, and cause large quantities of oxygenated ground water to mix with leachate. This mixing has significant consequences on the chemical character of the ground water and is a major control on the types of reactions occurring.

The direction of ground-water flow and location of wells sampled in this study are shown in Figures 2 and 3. Wells on the landfill are 25 to 30 ft (7 to 9 m) deep and the recovery and monitor wells are about 100 ft (30 m) deep. Elevation of the natural potentiometric surface before develop-

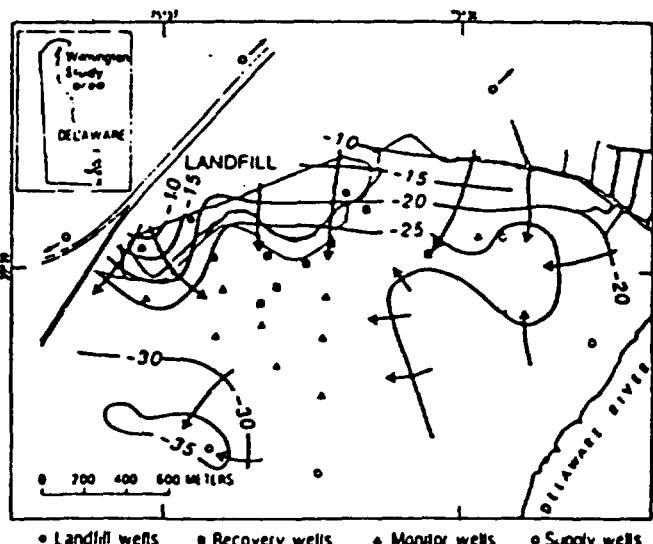


Fig. 2. Elevation of water level in feet below sea level. Arrows show direction of ground-water flow toward recovery and supply wells (modified from Apgar, 1978).

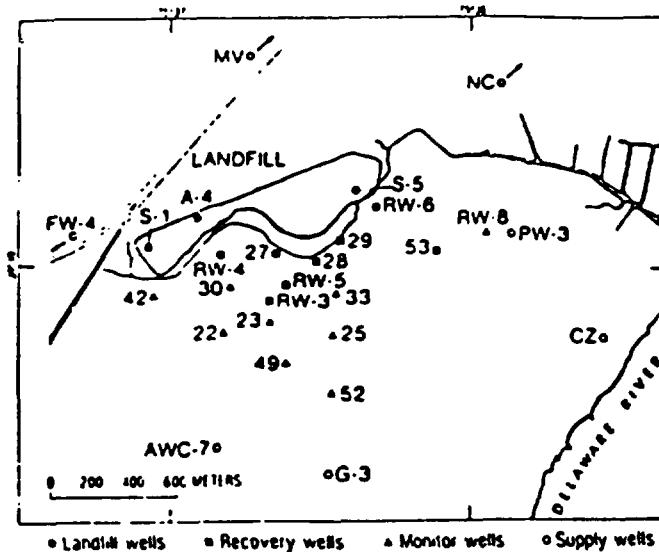


Fig. 3. Location of wells sampled. Wells FW-4, MV and NC are upgradient of the landfill and were considered background wells. They are within a mile of the landfill in the direction of the arrow.

ment of the aquifer was a few feet above sea level and the flow direction was toward Delaware Bay. Pumping for both public supplies and removal of landfill leachate has lowered water levels as much as 35 ft (11 m) below sea level and changed the direction of flow (Figure 2). This flow pattern indicates that recharge water upgradient from the landfill moves through and beneath the landfill where it encounters the leachate and is discharged in part by recovery wells downgradient from the landfill. Part of the discharge of the recovery wells is also native ground water flowing from the south and east of the landfill. Apgar (1978) concluded that less water is moving through the narrow central part of the landfill and suggested the presence of less permeable layers. He estimated that about 70% of the water moving through the landfill is by vertical migration and the remaining 30% is recharged upgradient.

EXPERIMENTAL

Dissolved oxygen was determined in the field by the Alsterberg azide modification of the Winkler method. Organic nitrogen was determined by the Kjeldahl method; ammonia by distillation and subsequent detection with Nessler reagent; and dissolved organic carbon by the combustion method. Gases were collected and measured by the method of Fisher (see Pearson and others, 1978). Complete alkalinity titration curves were made because in some samples organic-acid anions contributed significantly to the alkalinity and the inflection point ranged between a pH of 3.0 and 4.9. To

determine organic-acid concentrations water samples were acidified with sulfuric acid, then steam distilled to remove the low-molecular weight acids which were then titrated with a base. Specific organic acids from the landfill water were determined on the distillate by conversion to p-bromophenyl esters and subsequent detection by gas chromatography. Amino acids were analyzed colorimetrically by the ninhydrin method. All other analyses were made by standard methods and procedures.

GEOCHEMICAL ASPECTS

Oxygen, Nitrogen Species and Redox

In this study the concentration of dissolved oxygen ranged widely from near saturation (8.4 mg/l) in water from supply wells to anoxic water on the landfill. This wide range of oxygen concentration permits delineation of three zones, an anaerobic zone, the regional oxygenated zone and a broad intermediate transition zone (Figure 4). Within the transition zone oxygen values range from a few tenths to 5.0 mg/l with highest concentrations in wells downgradient from the narrowest part of the landfill and in the easternmost well (PW-3).

A nitrogen index, which is the ratio of organic and ammonia nitrogen to nitrite and nitrate nitrogen was used to delineate redox zones (Figure 5). A low number (0.01) indicates absence of ammonia whereas a large number (> 100) caused by greater concentration of ammonia and N-containing organic compounds indicates more

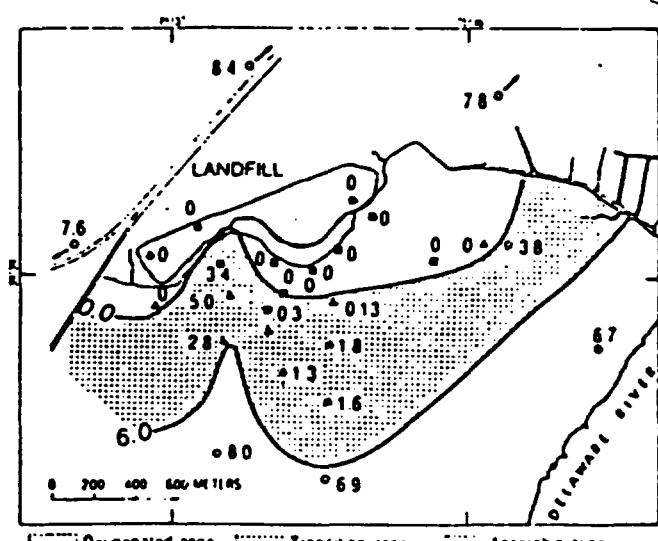


Fig. 4. Distribution of dissolved oxygen in ground water within the regional oxygenated zone, an anaerobic zone and a transition zone.

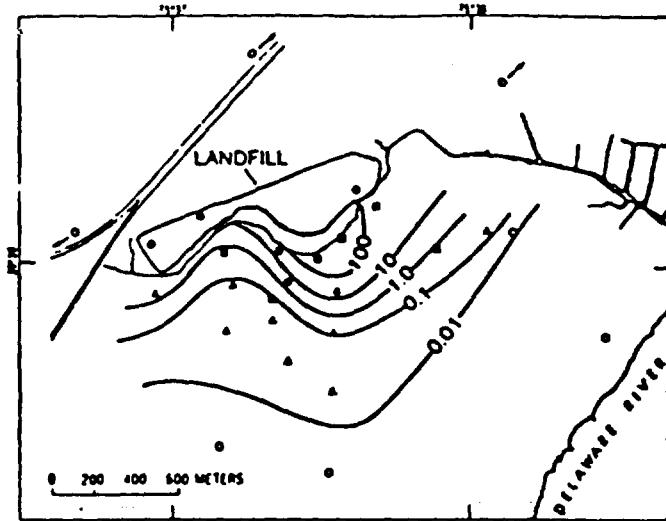


Fig. 5. Distribution of the ratio of reduced nitrogen species (Kjeldahl N) to oxidized nitrogen (NO_3^-) reflects redox conditions within the aquifer.

reducing conditions. Two major reducing plumes downgradient of the landfill are separated by less contaminated water below the narrowest part of the landfill. Use of this nitrogen index was possible because most of the water contained both nitrate and ammonia. This unusual coexistence may be caused partly by pumping the recovery wells which results in mixing of oxygenated water containing high nitrate with reducing water containing high ammonia. Without this mixing a sharper boundary would exist between the two masses of different water types.

Figure 6 shows anaerobic reactions and concentration of nitrogen species analyzed in the leachate. With the exception of NO_3^- , in the recharge water the values in parentheses are for samples from the central and eastern part of the

landfill (A-4 and S-5). These wells in the older part of the landfill are representative of leachate migrating in the eastern reducing plume. Water samples from the landfill had small quantities of nitrate ($< 0.2 \text{ mg/l}$ as N) and its source is probably from recharge water upgradient (3 mg/l as N) or rain water that directly infiltrates the landfill. Use of nitrate concentrations alone to indicate areas of contamination in ground water is misleading in a reducing environment because nitrate is biologically reduced to ammonia or denitrified to N_2 or N_2O . The concentrations of organic N and NH_4^+ are high (120 and 160 mg/l as N, respectively). The concentration of amino acids is low ($< 10 \text{ mg/l}$ as N) because in an environment dominated by methanogenic bacteria free amino acids are converted to other organic acids, NH_4^+ and CO_2 . Nitrification does not occur in the anaerobic zone because nitrifying bacteria require some oxygen and are intolerant of high concentrations of organic carbon. The ammonia moves downgradient where it is mixed with oxygenated water or is attenuated by sorption on clays.

The nitrogen index plotted against pH (Figure 7) shows that the supply wells have oxygenated water with low pH values from 4.6 to 5.2 which is consistent with an area that lacks natural calcareous material. Dissolved Fe and Mn are either not detected or present in small amounts ($< 0.02 \text{ mg/l}$) in the oxygenated water. However, water from the anaerobic zone has higher pH values, 6.3 to 6.8, and mean Fe and Mn concentrations of 86.8 and 1.7 mg/l , respectively. The high concentrations of iron and manganese most likely result from the refuse or from their mobilization when water, which has a reducing potential from the oxidation of organic material, comes in contact with ferric oxide

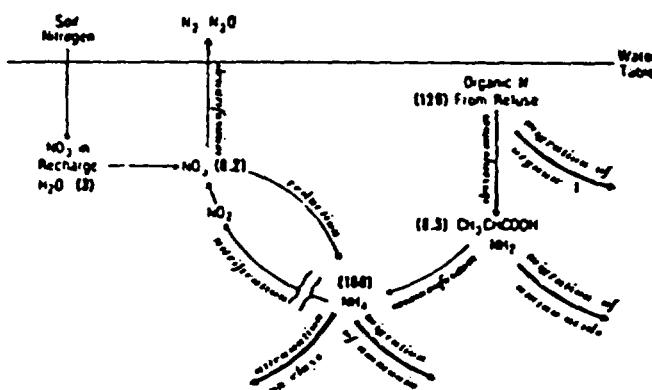


Fig. 6. Schematic flow chart showing reactions of nitrogen containing compounds below the water table in an anaerobic environment. Average concentrations, mg/l as N, for constituents at sites A-4 and S-5 on the landfill are given in parentheses.

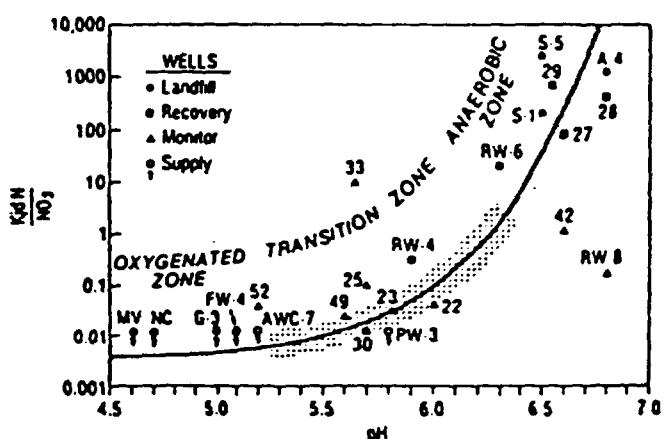


Fig. 7. Relationship of nitrogen index and pH in oxygenated, transition and anaerobic zones.

Table 1. Chemical Analysis of Water from Army Creek Landfill (mg/l)

Wells	T°C	pH (field)	Ca	Mg	Na	K	Total Alk. ¹	NO ₃	Cl	SO ₄	Fe	Mn	NH ₄ as N	— Org N	SiO ₂	TDS
Landfill																
S-1	16.2	6.50	337	173	633	328	4450	1.3	1250	<10	530	4.2	607	233	N.A.	6390
A-4	16.0	6.80	27	45	260	92	950	1.0	398	N.D.	22	0.1	167	130	9.2	1190
S-5	16.3	6.50	50	32	100	112	1280	0.4	108	2.3	45	0.1	234	110	15	805
Recovery																
RW-4	14.4	5.88	6.4	3.5	10	2.8	37	11	20	3.2	7.0	0.5	1.6	N.D.	8.8	99
RW-5	14.0	6.35	15	8.2	39	7.9	74	13	62	9.1	0.4	N.D.	N.A.	N.A.	6.4	220
RW-3	13.5	5.85	10	4.4	11	2.1	36	6.0	21	6.5	7.8	0.5	N.A.	N.A.	7.6	100
27	14.6	6.60	9.2	11	50	18	185	2.0	87	4.6	18	0.5	30	21	8.2	285
28	16.4	6.78	22	17	78	30	346	0.6	122	6.9	29	1.9	45	29	8.7	443
29	15.6	6.35	13	14	55	32	368	0.4	94	3.2	65	1.8	55	74	8.3	368
RW-6	13.8	6.32	6.8	4.4	16	6.9	100	0.9	28	8.1	19	2.0	7.2	N.D.	8.0	132
Monitor																
42	13.0	6.60	45	16	102	3.3	136	4.6	146	2.0	35	2.6	1.6	0.17	4.1	440
30	12.8	5.70	6.4	3.8	8.6	1.3	15	13	20	2.0	N.D.	0.1	0.2	N.D.	12	97
22	13.0	6.02	8.5	3.5	10	1.2	34	9.3	18	2.0	N.D.	0.1	0.1	0.04	8.6	86
23	12.9	5.80	1.7	1.0	3.2	0.7	8.8	0.9	5.0	0.9	N.D.	N.D.	0.01	N.D.	12	32
49	12.9	5.60	8.4	4.2	9.8	1.6	20	7.3	21	8.1	N.D.	N.D.	N.D.	0.06	8.9	85
25	13.8	5.70	12	5.4	18	1.9	33	0.4	40	12	0.4	0.06	0.1	N.D.	8.4	120
52	13.3	5.20	6.0	2.9	11	1.4	12	0.9	23	12	0.02	0.01	N.D.	0.09	8.8	82
33	14.6	5.65	2.5	9.3	33	2.9	58	0.3	77	15	N.D.	0.04	0.6	0.21	9.3	230
RW-8	12.8	6.80	13	7.3	16	2.3	83	4.6	30	4.3	18	1.7	N.D.	0.32	6.0	175
Supply																
Midvale	13.5	4.60	6.6	5.3	7.0	2.8	11	16	14	19	N.D.	N.D.	N.D.	N.D.	8.3	88
FW-4	13.0	5.10	6.8	4.0	5.6	2.1	12	17	12	7.8	0.02	0.01	N.D.	N.D.	9.1	85
AWC-7	12.8	5.20	3.6	1.8	4.1	1.0	9.0	16	6.0	0.1	N.D.	N.D.	N.D.	N.D.	9.4	56
G-3	13.1	5.00	9.5	4.4	32	1.4	6.6	3.2	68	3.7	N.D.	N.D.	N.D.	N.D.	9.3	197
PW-3	14.0	5.80	6.3	3.0	9.1	1.5	20	9.4	17	4.8	1.2	0.2	0.06	N.D.	9.5	80

N.D. = not detected

N.A. = not analyzed

¹ Organic acid anions calculated as acetic acid contribute 52% of the total alkalinity at S-1 and less than 13% at all other sites.

cements in the sands and clays and with oxidized manganese-bearing minerals. The reduction and release of Fe from clay surfaces has been suggested earlier on the basis of field evidence and by column experiments (Cartwright and others, 1976). Water in the transition zone shows the effects of mixing the two water types. The significantly higher pH in the anaerobic zone is somewhat surprising because large amounts of CO₂ generated from degradation of organic matter should lower pH. However, the pH is increased by the generation of ammonium ion and by fermentation reactions which consume hydrogen and CO₂ during the formation of methane.

Major Inorganic Ion

Chemical analyses for the landfill and down-gradient water are given in Table 1. The mean and standard deviation of relative concentrations (percentage of meq/l) of major inorganic constituents are shown (Figure 8) for four water types based on the nitrogen index. Native ground water unaffected by leachate is shown at group A as a calcium-magnesium type with chloride as the

Group	Nitrogen Index
A	>.01
B	.01 to 0.1
C	0.1 to 10
D	<10

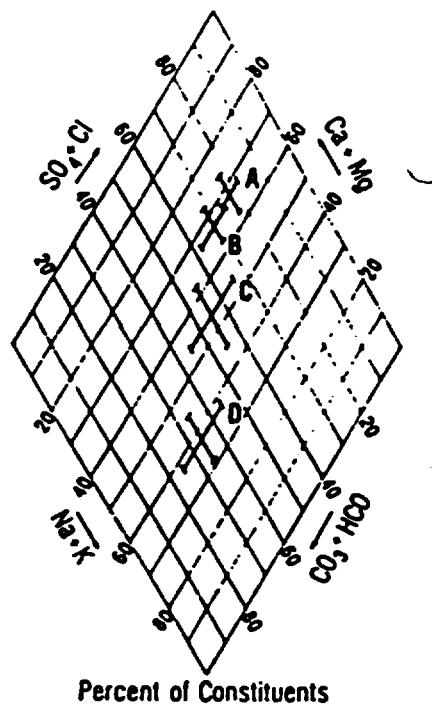


Fig. 8. Inorganic chemical composition of ground water from four redox environments based on the nitrogen index. Percentage of mean concentration of each group is plotted and the standard deviation is indicated by length of the lines.

major anion. Sulfate concentrations are quite low in both the leachate and natural water. Rainfall is the major source of chloride in the native ground water; rainfall and oxidization of iron sulfide are the main sources of sulfate. Concentrations of all constituents are quite low in the natural water which has a total dissolved solids (TDS) of about 80 mg/l. This mixed-cation type of water, in which no cation contributes more than 50% of the total cations, is characteristic of much water in recharge areas of the Atlantic Coastal Plain. The feldspars in the Potomac formation have been kaolinized (Owens, 1969) and the feldspars, chiefly microcline, in the overlying Tertiary sediments show evidence of extensive weathering and alteration (Owens and Minard, 1975). No calcareous material occurs in these sediments, and the saturation indices [Saturation Index = log (Ion Activity Product/ Equilibrium Constant)] for calcite and dolomite are about -5 and -9 which indicates the water is greatly undersaturated with respect to these carbonates. Within the area of study Ca, Na, and K in ground water unaffected by leachate are derived originally from the feldspars. In addition, alteration of ferro-magnesium silicates (hornblende, pyroxene, and epidote) contribute Fe, Mg, and Mn.

Chemical types and concentrations of major inorganic constituents of groups B and C (Figure 8) are intermediate between groups A and D and result from mixing of these two end-member types of water. Group D, with the highest nitrogen index includes those samples from the landfill and the recovery wells immediately downgradient. This water is a sodium bicarbonate type and the TDS of the leachate ranges from 800 to 6,400 mg/l. The saturation indices for samples of the leachate are .67 for calcite and 1.24 for dolomite, which shows supersaturation with respect to these minerals; three other samples in this group (D) immediately downgradient are slightly undersaturated. The highest TDS of samples collected downgradient from the landfill is about 450 mg/l. This increase in TDS from that of native ground water and the shift toward Na bicarbonate type water is primarily a result of simple mixing with leachate. Ionic ratios using chloride as a conservative parameter show that concentrations of Na, K, Ca, and Mg in downgradient wells result from mixing of leachate with native ground water rather than from additional dissolution.

The origin of the major cations in the leachate remains an unanswered question with the possible sources being (1) chemical sources in the refuse, (2) alteration of silicate minerals, and (3) desorption

from clays. If the cations are coming from inorganic compounds in the refuse, anions of Cl and SO₄²⁻ would perhaps be higher; if the cations originate from silicates the dissolved silica should be higher than the ~9 mg/l observed, which differs only slightly from natural concentrations of silica. The red clays of the Potomac formation are primarily kaolinite with illite and some vermiculite and montmorillonite (Pickett, 1970). These clay minerals often have sorbed cations which could be readily exchanged with the ammonium generated in the leachate. Therefore, clays in the material used for daily cover of the trash may be an important source of Na, K, Ca, and Mg.

Carbon Species

Dissolved organic carbon is high in the landfill leachate (up to 3,700 mg/l); however, its concentration decreases rapidly downgradient (<20 mg/l) as organic compounds are degraded and the leachate is diluted. The dissolved organic carbon does not have a systematic distribution and, therefore, was not used to define reaction zones.

We separated and identified by gas chromatography eight low molecular weight organic acids from one site on the landfill (S-1). They were straight-chained and 2-methyl branched acids ranging from 2 to 8 carbon atoms per molecule (Table 2) with a total concentration of 470 mg/l. The total alkalinity, including anions of organic acids, was 4,450 mg/l at this site which means the acids comprise at least 11% of the alkalinity. This value represents the minimum contribution because some acids may not have been detected owing to problems of incomplete separation and recovery during analysis. In a separate experiment leachate water was acidified, distilled, and the distillate then back titrated to determine the concentration of volatile organic compounds, including organic

Table 2. Organic Acids¹ from Landfill Site S-1 (mg/l)

Acetic	50.4
Propionic	50.8
Isobutyric	25.8
Butyric	132.9
Isovaleric	72.1
Valeric	51.4
Isocaproic	10.7
Caproic	75.7
TOTAL:	469.8

¹ Separated by distillation and identified by gas chromatography as p-bromophenacyl esters by comparison with known standards.

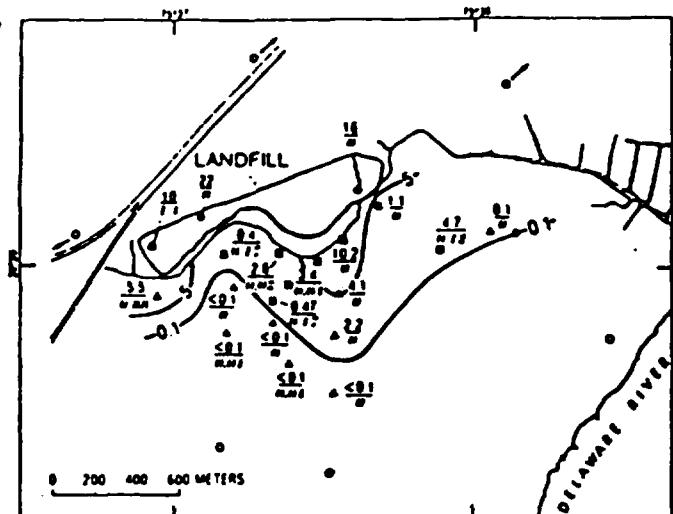


Fig. 9. Distribution of methane/ethylene in mg/l. Lines of equal methane concentration show reducing fronts.

acids, that react with hydrogen ions. The back-titration alkalinity was approximately 2,330 mg/l which indicates that organic compounds comprise as much as 52% of the total alkalinity.

Analyses of the hydrocarbon gases show that the concentration of methane ranges from less than 0.1 mg/l (the detection limit) to 22 mg/l (Figure 9). The highest concentrations are on the landfill and the distribution shows a systematic downgradient decrease similar to the nitrogen index. Only a few metabolic pathways are documented which lead to production of methane (Wolfe, 1971). The most likely mechanisms for its generation on a landfill are the conversion of acetic acid to methane and CO₂, and the direct hydrogenation of CO₂ to methane (Figure 1). Large amounts of CO₂ and CH₄ are produced in the landfill beneath the water table; however, hydrogen is not detected in these waters because it is utilized by the methane-producing bacteria probably as rapidly as it is formed. Only a small amount of bicarbonate (10 mg/l) is in the natural ground water while the bicarbonate in the landfill water is more than 950 mg/l. Therefore, the main input of CO₂ is from inorganic degradation in the landfill with a minimal contribution of CO₂ from the soil zone (Figure 10). Some of the CO₂ is retained as bicarbonate, part is microbially converted to CH₄, and the rest is lost by outgassing. Part of the generated methane diffuses upward and escapes directly or is oxidized to CO₂, and that remaining migrates with the leachate.

The unsaturated hydrocarbon, ethylene, was detected also but its distribution (Figure 9) is quite different from that of methane. With one

exception it was found only on the west side near the newer part of the landfill, and this restricted occurrence suggests that it was deposited or generated within that part of the landfill and migrated. Its detection in several downgradient wells may indicate ethylene is conservative and perhaps will be useful as a tracer in chemical transport modeling. Ethylene in Well 53 may be from a smaller landfill in that area where liquid chemicals were deposited. Also, the saturated hydrocarbon, ethane, was detected only at the sites where ethylene occurs and was probably formed by the hydrogenation of ethylene. It is apparent that ethylene and ethane originated from organic material by processes different from those bacterial processes responsible for the generation of methane.

Isotopes

Several studies have shown that the carbon isotopic composition of CO₂ and CH₄ is controlled, in part, by biological decay processes (Nissenbaum *et al.*, 1972; Games and Hayes, 1974, 1976; Baedecker and Fisher, 1977). In biological processes the lighter isotope, ¹²C, is preferentially utilized which results in the remaining carbon being enriched in the heavier, ¹³C, isotope. Isotopic ratios are expressed in terms of $\delta^{13}\text{C}_{\text{PDB}}$ where

$$\delta^{13}\text{C} \text{ per mil} = \frac{\frac{^{13}\text{C}}{^{12}\text{C}} \text{ sample} - \frac{^{13}\text{C}}{^{12}\text{C}} \text{ standard}}{\frac{^{13}\text{C}}{^{12}\text{C}} \text{ standard}} \times 1000$$

A more positive $\delta^{13}\text{C}$ value indicates enrichment in ^{13}C and conversely, a more negative value indicates depletion in the ^{13}C isotope.

The $\delta^{13}\text{C}$ of inorganic carbon dissolved in natural ground water for this area is about -25 per mil which indicates that the main source of CO_2 is from vegetation and oxidation of organic matter in soils and reflects the absence of calcareous material.

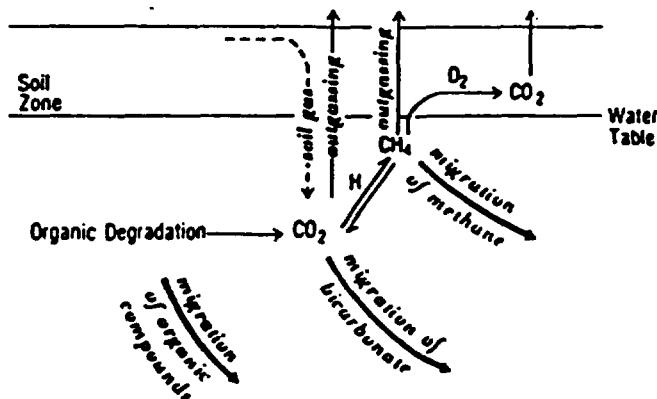


Fig. 10. Schematic of the origin and fate of carbon compounds in ground water under anoxic conditions.

for dissolution. $\delta^{13}\text{C}$ values of inorganic carbon in the landfill water are +10.30‰ in the most recently filled part (S-1); +15.30‰ in the middle portion (A-4); and +18.40‰ in the oldest part (S-5).

The inorganic carbon pool is most highly enriched in the ^{13}C at site S-5 because the fill has been emplaced for a longer period of time which has allowed the decomposition reactions to go nearer to completion and produce more methane. It is probable that as the reactions continue in the newer portion of the landfill, $\delta^{13}\text{C}$ values for inorganic carbon will eventually approach the $\delta^{13}\text{C}$ values in the older part. Several recovery wells (27, 28, 29, RW-5, RW-6) downgradient of the landfill have enriched $\delta^{13}\text{C}$ values ranging from +7.1 to -10.5‰ which indicates mixing with a substantial amount of leachate.

The percentage of leachate in downgradient wells was calculated using Cl as a conservative constituent assuming that water high in Cl from the landfill mixes with native water low in Cl. A hypothetical mixing line can be drawn using as end members the landfill wells (A-4 and S-5) for 100 percent leachate and from supply wells (AWC-7, FW-4, MV, NC) for 0 percent leachate. A plot of percent leachate against both ^{13}C values and HCO_3^- concentrations of water from recovery and monitor wells shows that water with a higher percentage of leachate (Sites 27, 28 and 29) is depleted in inorganic carbon and enriched in the ^{13}C isotope (Figure 11). If mixing were the only process involved, the data would fall on the mixing line. Possible reactions that could cause this depletion are (1) precipitation of calcite, (2) formation of methane by hydrogenation of CO_2 , and

(3) outgassing. The first reaction can be eliminated from consideration because the contaminated water downgradient from the landfill has saturation indices of -1 to -4 which indicates it is greatly undersaturated with respect to calcite; however, the latter two processes may explain both the loss of HCO_3^- and the heavier $\delta^{13}\text{C}$ values.

Deuterium and oxygen-18 measurements of ground water were made to determine if chemical and biological reactions of constituents dissolved in leachate significantly affect the isotopic composition of water. Previous work by Fritz, Matthess, and Brown (1976) showed a marked enrichment in both deuterium and oxygen-18 in leachate relative to the surrounding ground water. Isotope measurements in this present study showed enrichment in deuterium (-36.44‰) (parts per thousand difference of D/H relative to Vienna, Standard Mean Ocean Water (V-SMOW)) in landfill leachate compared with -44.65‰ for downgradient supply wells. However, oxygen isotope values of -7.68‰ and -7.75‰ for the leachate and surrounding water, respectively, do not differ significantly. Deuterium enrichment may be due to decomposition of materials in the landfill with a different isotopic composition or from bacterial processes that preferentially consume the lighter hydrogen isotope.

CONCLUSION

Pumping the recovery wells causes leachate to mix with highly oxygenated native water, and the resulting oxygenation of the leachate is one of the important controls on the chemical character of the water. The availability of oxygen and the formation and existence of certain types of organic material have a major influence on biological activity in the subsurface environment. Distribution of the nitrogen species, such as that indicated by the ratio of reduced nitrogen (organic N and NH_3) to nitrate can be used to locate reducing plumes as the leachate migrates through the aquifer. The natural water has an extremely low pH, while water with an increasing percentage of leachate in the landfill area has a higher pH, probably as a result of the generation of CO_2 , NH_3 , and CH_4 .

Sources for the major cations in the natural water are rainfall and alteration of silicate minerals. Sources of cations in the contaminated water are possibly from refuse and from the alteration of silicate minerals, but more probably from clays by exchange with the large amount of ammonium generated. Possible sources of high concentrations of Fe and Mn in the landfill water are the

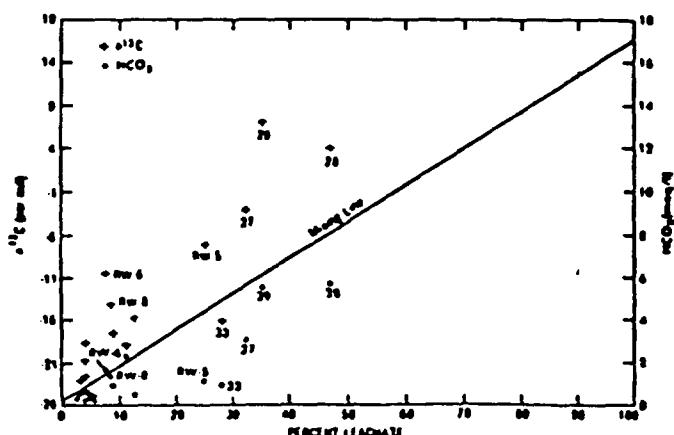


Fig. 11. Relationship of percentage leachate $\delta^{13}\text{C}$ values, and concentration of HCO_3^- . Mixing line based on Cl concentrations in water from supply wells for 0% leachate and Wells A-4 and S-5 for 100% leachate. Numbered wells are discussed in text.

buried trash and reduction of Fe oxides and natural oxide coatings by reaction with organic compounds. Organic acid anions contribute significantly to, and at one site control, the alkalinity concentration. The extremely heavy $\delta^{13}\text{C}$ of inorganic carbon in the leachate results from generation of isotopically light methane and perhaps to a lesser extent by outgassing of CO_2 , thereby leaving a residual pool of heavier carbon. Although we do not understand the process that causes enrichment of deuterium in the landfill, the enrichment appears to be a valid indicator of contamination and may result from decomposition of carbohydrates and bacterial processes that preferentially consume the light hydrogen isotope. Isotopic data and chemical analyses indicate that processes other than simple mixing are important in the distribution of some species in water downgradient of the landfill. These preliminary results on the use of isotopes as indicators of pollution are encouraging and merit further investigation.

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S

APPENDIX S

SOIL BORING LOGS USED FOR GENERATION OF CROSS-SECTIONS

APPENDIX S
BORING LOGS USED FOR GENERATION OF CROSS-SECTIONS

- S-1 Cross-Section A-A'
 Borings PE3A; US3D; US4D; W3D; US6D; PZ3U; PZ4U; LB9; G14D; US1D
- S-2 Cross-Section B-B'
 Borings US5D; G11D; LB7; LB8; US4D; W3D; PZ2U; US2D
- S-3 Cross-Section C-C'
 Borings US3D; US4D; B1; B2; B3; B4; B5; US6D
- S-4 Cross-Section D-D'
 Borings LB7; LP3; LP4; LP5; LP7; LP8; LP9; W7D
- S-5 Cross-Section E-E'
 Borings W2D; TSC107; P2A; LP8; TSC1202; PZ6U; PZ4U

APPENDIX S-1

CROSS-SECTION A-A'

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois				DRILLING METHOD Hollow-stem auger/rotary				BOREHOLE NO. PE-3	
								SHEET 1 of 5	
Borehole located on SE corner at Nice Ice property in industrial park area near Municipal Well 4.				SAMPLING METHOD 2" O.D. split spoon				DRILLING	
				Samples collected by Patrick Engineering					
								START	FINISH
								TIME	TIME
WATER LEVEL				9:53 AM	2:00 PM				
TIME				DATE	DATE				
DATE				9/14/89	9/15/89				
CASING DEPTH									
DATUM MSL ELEVATION 768.92' LS									
DRILL RIG CME 75				SURFACE CONDITIONS Flat, dry, fill material					
ANGLE Vertical		BEARING							
SAMPLE HAMMER TORQUE 140 FT-BLS									
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS	
								WATER CONTENT %	LIQUID LIMIT %
0 - 1.0			Not sampled.						
1.0 - 2.5	- -5-5 (1.0)		Soil/fill, light brown, sandy, with some organic material. Pushed upper 6.0". SYR S6						
2.5 - 4.0	4-5-5 (1.2)	SP	Sand/fill, light brown to tan, fine to medium grained, subrounded, well sorted, silty. SYR S6						
4.0 - 5.5	4-6-7 (1.2)	SP	Sand (85 %), very fine to medium grained, mostly fine grained, subangular to well rounded with gravel (15 %), fine grained, subrounded; sample is light brown, moderately well sorted, silty. SYR S6, Sm						
5.5 - 7.0	4-5-6 (1.3)	GW	Gravel (60 %), up to 0.03" in diameter, angular to subangular; sand (30 %), mostly fine grained, angular to subrounded; silt (10 %); sample is light brown, poorly sorted. Pushed upper 3.0". SYR S6, Gm						
7.0 - 8.5	3-5-7 (0.4)	SW	Gravel (80 %), up to 0.1" in diameter, angular to subangular; sand (10 %), mostly fine grained, angular to subrounded; silt (10 %); sample is moderate brown, poorly sorted. 10YR 5/4, Gm						

DRILLING CONTR
 Patrick Engineering Co
 W.J. Powell, 1/6/90

LOGGED BY Neil Moss SL 30179 DATE 9/14/89

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois				DRILLING METHOD Hollow-stem auger/rotary					BOREHOLE NO. PE-3		
Borehole located on SE corner at Nice Ice property in industrial park area near Municipal Well 4.				SAMPLING METHOD 2" O.D. split spoon					SHEET 2 of 5		
				Samples collected by Patrick Engineering							
DATUM MSL ELEVATION 768.92' LS				DRILLING					START	FINISH	
				WATER LEVEL					TIME	TIME	
				TIME				9:53 AM	2:00 PM		
				DATE				DATE	DATE		
				CASING DEPTH				9/14/89	9/15/89		
DRILL RIG CME 75				SURFACE CONDITIONS Flat, dry, fill material							
ANGLE Vertical		BEARING									
SAMPLE HAMMER TORQUE 140 FT-BLS											
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS		
									WATER CONTENT%	LIQUID LIMIT %	PLASTIC
8.5 - 10.0	2-2-6 (1.5)	GC	Gravel (70 %), very fine to fine grained, angular to subangular; sand (15 %), very fine to very coarse grained, subangular to subrounded; silt and clay (15 %); sample is dark yellowish-orange, poorly sorted, wet. 10YR 6/6, Gm								
10.0 - 11.5	3-6-9 (1.0)	GC	Gravel (50 %), up to 0.05" in diameter, mostly fine grained, angular; sand (25 %), very fine to very coarse grained, subangular to subrounded; silt (25 %); sample is medium dark gray, very poorly sorted. 4N, Gm								
11.5 - 13.0	4-5-3 (1.0)	GC SC	Gravel (upper 0.4"), as above; lower 0.6" silt to very fine sand grading downward to clay, medium dark gray, clay at base soft. 4N, Fcf								
13.0 - 14.5	3-4-8 (1.5)	CL	Clay, medium dark gray, soft, trace coarse sand and fine gravel. 4N, Dmm								
14.5 - 16.0	5-8-9 (1.3)	GW/ CL	Upper 0.3" gravel (90 %), very fine to fine grained, angular to subangular; sand (10 %), fine to coarse grained; silt (10 %); poorly sorted; lower 1.0" clay, medium dark gray, soft. 4N, Dmm								
16.0 - 17.5	... (1.5)	CL	Clay, medium dark gray, soft, with trace gravel (up to 0.08" in diameter). 4N, Dmm								

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois			DRILLING METHOD Hollow-stem auger/rotary	BORING NO PE-3	Patrick Engineering Co W.J. Powell, P.E.G.S. DRILLING CONTR						
				SHEET 3 of 5							
			SAMPLING METHOD 2" O.D. soil spoon	DRILLING							
			Samples collected by Patrick Engineering	START		FINISH					
			WATER LEVEL	TIME		TIME					
			TIME	9:53 AM		2:00 PM					
			DATE	DATE		DATE					
			CASING DEPTH	9/14/89		9/15/89					
DATUM MSL ELEVATION 768.92' LS											
DRILL RIG CME 75			SURFACE CONDITIONS	Flat, dry, fill material							
ANGLE Vertical	BEARING										
SAMPLE HAMMER TORQUE 140 FT-BLS											
DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
17.5 - 19.0	3-5-7 (1.5)	CL	Clay, medium dark gray, soft, with 0.25" fine grained sand seam near base. 4N, Dmm				WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
19.0 - 20.5	3-4-5 (1.5)	CL	Clay, medium dark gray, soft, with trace coarse sand and fine gravel. 4N, Dmm Set hole plug seal from approximately 16.0' to 20.0' BLS.								
20.5 - 22.0	--- (1.0)	CL	Clay, medium dark gray, with trace coarse sand and fine gravel. Begin advancement of borehole with 3" tri-cone roller bit. Pushed sampler. 4N, Dmm								
22.0 - 23.5	--4-6 (1.5)	CL	Clay, same as above. Pushed sampler upper 6.0". Dmm								
23.5 - 25.0	6-7-7 (1.5)	CL	Clay, same as 20.5' to 22.0'. Dmm								
25.0 - 26.5	3-5-6 (1.5)	CL	Clay, same as 20.5' to 22.0'. Dmm								

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois				DRILLING METHOD Hollow-stem auger/rotary	BORING NO. PE-3								
				SAMPLING METHOD 2" O.D. split spoon	SHEET 4 of 5								
Borehole located on SE corner at Nice Ice property in industrial park area near Municipal Well 4.				Samples collected by Patrick Engineering	DRILLING								
				WATER LEVEL	START	FINISH							
				TIME	TIME								
				9:53 AM	2:00 PM								
				DATE	DATE								
				CASING DEPTH	9/14/89	9/15/89							
DATUM MSL ELEVATION 768.92' LS													
DRILL RIG CME 75	SURFACE CONDITIONS Flat, dry, fill material												
ANGLE Vertical	BEARING												
SAMPLE HAMMER TORQUE 140 FT-BLS													
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	TEST RESULTS								
					CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS		
26.5 - 28.0	7-8-8 (1.5)	CL	Clay, medium dark gray, silty, with trace coarse sand and fine gravel. 4N, Dmm										
28.0 - 29.5	8-8-9 (1.3)	CL	Clay, same as above. Dmm										
29.5 - 31.0	8-8-9 (1.2)	CL	Clay, same as 26.5' to 28.0' except with a < 0.2" thick, very fine grained sand seam in a near vertical position. Dmm										
31.0 - 32.5	... (1.2)	CL	Clay, same as 26.5' to 28.0'. Pushed sampler. Dmm										
32.5 - 34.0	7-7-9 (1.1)	CL	Clay, same as 29.5' to 31.0'. Dmm										
34.0 - 35.5	7-8-7 (1.1)	SP	Sand, medium dark gray, very fine to medium grained, mostly fine grained, subrounded to well rounded, well sorted, silty, moist. 4N, Sg Head space analysis with Patrick Engineering's HNU = 15 ppm.										

Patrick Engineering Co

DRILLING CONTR

W. J. Powell, 1/16/90

CHKD BY

Neil Moss

LOGGED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

HOD Landfill
Antioch, Illinois

Borehole located on SE corner at
Nice Ice property in industrial park
area near Municipal Well 4.

DATUM MSL ELEVATION 968.92' LS

DRILLING METHOD Hollow-stem auger/rotary

BOREING NO
PE-3

SHEET
5 of 5

SAMPLING METHOD 2" O.D. split spoon

Samples collected by Patrick Engineering

DRILLING

START FINISH

WATER LEVEL

TIME TIME

TIME

9:53 AM 2:00 PM

DATE

DATE DATE

CASING DEPTH

9/14/89 9/15/89

DRILL RIG CME 75

SURFACE CONDITIONS Flat, dry, fill material

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140 FT-BLS

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY

35.5 - 37.0	---	SW/ CL	Upper 1.0' sand, as above, grain size increases slightly toward base; lower 0.5' sandy clay grading into clay, medium dark gray. 4N, Sg							
37.0 - 38.5	3-5-5 (1.5)	CL	Clay, medium dark gray, stiff, slightly silty with trace coarse sand and fine gravel. 4N							
38.5			Total depth. Due to possible contamination of 34.0' to 36.5' sand - put hole plug from 20.0' to 38.5'; Portland/bentonite grout from near surface to 20.0'.							

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

H.O.D. Landfill
Antioch, Illinois

-50' West southwest of Antioch
MW-4, offset of PE-3

DRILLING METHOD 3 1/4" auger, 3" rotary

BORING NO.
PE-3A

SHEET
1 of 8

SAMPLING METHOD 24" Split spoon, 18" samples

DRILLING

Samples collected by Patrick Engineering

Patrick Drilling

DRILL RIG CME 75 ATV
ANGLE vertical
SAMPLE HAMMER TORQUE 140 FT-BLS

DATAUM MSL ELEVATION 768.92 LS

CASING DEPTH SURFACE CONDITIONS Grassy area beside driveway.

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	TEST RESULTS					
					CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT %	Liquid Limit %	Plastic	Specific Gravity
34.5-		SC	Sand (40%); Very clayey (40%), silty (10%) with gravel (1/4"), light olive gray, SY 6/1.							
35.5-		CL	Clay: Silty, massive, trace sand, SY 6/1, Dm.							
35.5-		CL	Clay: Silty, massive, trace sand, SY 6/1, Dm.							
42.0-	3-4.5 (12)	CL	Clay: Massive sandy silty, with 5% gravel, slightly calcareous to calcareous, SY 6/1, Dms(c).							
43.5-	8-6-6 (12)	CL	Clay: Gravelly 30% to 1/2", Dms(c). Cray: very silty, massive, trace sand-gravel, and silt; very clayey, abrupt contact, SY 6/1, Dms(c).							
45.0-	4-4-5 (18)	ML	Silt: Clayey, massive, trace sand with 10% gravel, SY 6/1, Dms(c).							
46.5-	5-6-7 (18)	ML	Silt: Clayey, massive, clayey, Dms(c). Clay: Massive, silty (50%), clayey, trace sand-gravel, SY 6/1, Dms(c).							

LOGGED BY Jay S Johnston

SL 30184

DATE 09/29/89

CHK'D BY W.J. Powell (1/16/90)

DRILLING CONTR

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois ~50' west southwest of Antioch MW-4, offset of PE-3				DRILLING METHOD 3 1/4" auger, 3" rotary	SCREING NO. PE-3A
				SAMPLING METHOD 24" Split-spoon, 18" samples	SHEET 2 of 8
Samples collected by Patrick Engineering				DRILLING	
				START	FINISH
WATER LEVEL				TIME	TIME
TIME				3:30	4:00
DATE				DATE	DATE
CASING DEPTH				09/25/89	09/28/89

DATUM MSL ELEVATION 768.92 LS

DRILL RIG CME 75 ATV	SURFACE CONDITIONS Grassy area beside driveway.						
ANGLE vertical	BEARING						
SAMPLE HAMMER TORQUE 140 FT-BLS							
DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS

48.0 - 49.5	4-6-6 (18")	MC ---- CL	Clay: Massive, silty, as above, Dms(c). Silty: Same as 46.5 - 47.0, with 10% gravel, Dms(c).				
49.5 - 51.0	8-11-11 (18")	ML	Silt: Massive clayey, as above, with zones of fine to medium grained, well sorted sand, zones range from irregular small pockets to vertical seams, trace 1/8" gravel, Dms(c).				
51.0 - 52.5	pushed spoon (18")	CL	Clay: Massive, silty (50%), trace coarse sand and 1/8" gravel, Dms(c).				
52.5 - 54.0	9-12-17 (18")	CL	Clay: Massive, silty, as above, with 2" zones of gravel (20%) to 3/8", Dms(c).				
54.0 - 55.5	12-11- 18 (18")	MC ---- SP	Silt: Massive, clayey, with 2" zones of very fine grained sand, well sorted, clean, Dcs (c).				
55.5 - 57.0	10-10- 10 (18")	CL	Clay: Massive, silty, trace sand and gravel, with some horizontal sand seams (1/8"), Dms (c).				

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois				DRILLING METHOD 3 1/4" auger, 3" rotary				SCORING NO. PE-3A	
								SHEET 3 of 8	
~50' west southwest of Antioch MW-4, offset of PE-3				SAMPLING METHOD 24" Split-spoon, 18" samples				DRILLING	
				Samples collected by Patrick Engineering				START FINISH	
DATUM MSL ELEVATION 768.92 LS				WATER LEVEL				TIME	TIME
				TIME				3:30	4:00
				DATE				DATE	DATE
CASING DEPTH							09/25/89	09/28/89	
DRILL RIG CME 75 ATV				SURFACE CONDITIONS Grassy area beside driveway.					
ANGLE vertical		BEARING							
SAMPLE HAMMER TORQUE 140 FT-BLS									
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS	
								WATER CONTENT %	LIQUID LIMIT %
57.0 - 58.5	5-7-9 (18")	CL ---- ML	Clay: As above. Silt: Very clayey, increase in sand in lower 1" of spoon to 20%. non-calcareous - slightly calcareous.						
58.5 - 60.0	12-22- 23 (18")	SM	Clay: As above, with 3" moderately sorted sand, fine to very coarse grained, round to subangular (coarse), 5% fine gravel. 45% dipping abrupt contacts. Dms(c)/Sm.						
60.0 - 61.5	16-20- 10 (18")	SM ---- ML ---- SP	Silt: Massive, clayey, with 2-3" beds of clayey, silty sand, fine to coarse grained, dipping contacts, SY 6/1, Sm.						
61.5 - 63.0	10-13- 14 (18")	ML ---- CL	Silt: As above, 10% very fine grained sand. Clay: Massive, silty, trace sand and gravel, SY 6/1, Dms(c).						
63.0 - 64.5	5-8-12 (18")	CL	Clay: Massive, silty, trace sand, as above, 1/4" gravel to 15% in upper 3", Dms(c).						
64.5 - 66.0	18-15- 19		No recovery.						

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois ~50' west southwest of Antioch MW-4, offset of PE-3 DATUM MSL ELEVATION 768.92 LS			DRILLING METHOD 3 1/4" auger, 3" rotary				BORING NO.			
							PE-3A			
							SHEET			
							4 of 8			
			SAMPLING METHOD 24" Split-spoon, 18" samples				DRILLING			
			Samples collected by Patrick Engineering				START		FINISH	
			WATER LEVEL				TIME		TIME	
			TIME				3:30		4:00	
DATE				DATE		DATE				
CASING DEPTH				09/25/89		09/28/89				
DRILL RIG CME 75 ATV			SURFACE CONDITIONS Grassy area beside driveway.							
ANGLE vertical BEARING										
SAMPLE HAMMER TORQUE 140 FT-BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS				
						WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
66.0 - 67.5	8-7-7 (12")	CL	Clay: As above with irregular sandy zones, fine to coarse grained, moderately sorted, trace gravel to 1/2", Dms(c).							
67.5 - 69.0	9-14-13 (16")	CL ---- ML	Clay: As above, grades down to silt. Silt: Clayey (10%).							
69.0 - 70.5	7-7-9 (12")	ML	Silt: Massive with very fine grained sand, well sorted, calcareous, SY 6/1, Dcg.							
70.5 - 72.0	7-7-6 (14")	ML	Silt: Clayey (30%), massive, slightly calcareous, Dcg.							
72.0 - 73.5	4-4-7 (18")	ML	Silt: (30%) gravelly, clayey, massive, slightly calcareous, trace fine sand and gravel, 1/4" gravel to 20% in upper 2", Dcg.							
73.5 - 75.0	10-10 12 (18")	ML	Silt: As above with 6" zones of gravelly silt (30%), gravel to 1/2", Dcg.							

Patrick Drilling

Drilling Contr

W.J.Powell(11/16/90)

CHKD BY

DATE

09/29/89

LOGGED BY

Jay S. Johnston

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois ~50' west southwest of Antioch MW-4, offset of PE-3 DATUM MSL ELEVATION 768.92 LS				DRILLING METHOD 3 1/4" auger, 3" rotary					SCRITCH NO. PE-3A		
									SHEET 5 of 8		
				SAMPLING METHOD 24" Split-soon, 18" samples					DRILLING		
				Samples collected by Patrick Engineering					START	FINISH	
									TIME	TIME	
									3:30	4:00	
									DATE	DATE	
									09/25/89	09/28/89	
DRILL RIG CME 75 ATV				SURFACE CONDITIONS Grassy area beside driveway.							
ANGLE vertical		BEARING									
SAMPLE HAMMER TORQUE 140 FT-BLS											
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	BLOW/S/FOOT ON CASING	TEST RESULTS		
									WATER CONTENT %	LIQUID LIMIT %	PLASTIC
75.0 - 76.5	10-10- 10 (12")	ML	Silt: As above, with increase in sand (15%) fine to coarse grained and gravel (1/4") to 20%, clayey, decrease in gravel to 5% in lower 6", with trace sand, Dcg.								
76.5 - 78.0	10-13- 19 (12")	ML SP	Silt: As above.								
78.0 - 79.5	7-12- 10 (4")	SM	Sand: Very fine to fine grained, well sorted, clean, gradational contact, saturated.								
79.5 - 81.0	8-4-5 (14")	SP	Sand: Very fine to fine grained, silty (20%), clayey (10%). Trace 1/8" gravel.								
81.0 - 82.5	3-5-8 (12")	SP	Sand: Fine to medium grained, well sorted, subrounded to subangular and silt (10%), SY 6/1, HnU - 15 ppm.								
82.5 - 84.0	4-8-10 (12")	SP CL	6" Sand: Fine to coarse grained, well sorted. 6" Interstratified sand: As above, with 3" beds of silty clay. Trace 1/8" gravel, SY 6/1.								

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois ~50' west southwest of Antioch MW-4, offset of PE-3		DRILLING METHOD 3 1/4" auger, 3" rotary				BOREHOLE NO. PE-3A	
						SHEET 6 of 8	
		SAMPLING METHOD 24" Split-spoon, 18" samples				DRILLING	
		Samples collected by Patrick Engineering				DRILLING	
		WATER LEVEL				START	FINISH
		TIME				TIME	TIME
		DATE				DATE	DATE
		CASING DEPTH				09/25/89	09/28/89

DATUM MSL ELEVATION 768.92 LS DRILL RIG CME 75 ATV SURFACE CONDITIONS Grassy area beside driveway.

ANGLE vertical	BEARING	SAMPLE HAMMER TORQUE 140 FT-BLS		SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
		DEPTH IN FEET (ELEVATION)	BLOWS/IN. ON SAMPLER (RECOVERY)					WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
84.0 - 85.5	7-9-10 (8")	SP		Sand: Fine to medium grained, well sorted, clean, subrounded. 5Y 6/1.							
85.5 - 87.0	8-10-17 (12")	SP ----- CL		Sand: As above with 1/8" layers of silty clay 1" very hard silty clay at bottom, 13 ppm HnU.							
87.0 - 88.5	12-20-21 (18")	CL ----- SP		Clay: As above, with 2" beds of medium to coarse grained sand, as above, abrupt contact dipping 35 degrees. 5Y 6/1.							
88.5 - 90.0	5-7-12 (12")	SP ----- SM		Sand: Medium to coarse grained, as above, grading down to sand, fine to medium grained with 20% silt, moderately sorted. HnU - 6 ppm.							
90.0 - 91.5	14-16-18 (18")	SP ----- ML		Sand: Fine to medium grained, well sorted with silt. Silt: Clayey, massive, trace of sand.							
91.5 - 93.0	12-16-27 (18")	CL ----- SP		Clay: Massive, silty, trace fine sand, slightly calcareous, with 1/2" interbeds of sand, fine to medium grained, well sorted, abrupt contacts.							

CHIK'D BY	W.J. Powell (1/1689)	LOGGED BY	Jay S. Johnson	DATE	09/29/89	DRILLING CONTR	Patrick Drilling
SL 30189							

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois ~50' west southwest of Antioch MW-4, offset of PE-3		DRILLING METHOD 3 1/4" auger, 3" rotary		BORING NO. PE-3A	
				SHEET 7 of 8	
		SAMPLING METHOD 24" Split-spoon, 18" samples		DRILLING	
		Samples collected by Patrick Engineering			
				START	FINISH
		WATER LEVEL		TIME	TIME
		TIME		3:30	4:00
		DATE		DATE	DATE
DATUM MSL	ELEVATION 768.92 LS	CASING DEPTH		09/25/89	09/28/89

DRILL RIG CME 75 ATV		SURFACE CONDITIONS Grassy area beside driveway.	
ANGLE vertical	BEARING		
SAMPLE HAMMER TORQUE 140 FT-BLS			

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWSFoot ON CASING	TEST RESULTS			
							WATER CONTENT %	Liquid Limit %	PLASTIC	SPECIFIC GRAVITY
93.0 - 94.5	15-23- 20 (14")	CL ----- SM	Clay: Massive, silty, as above. 1" layers of very fine grained sand and silt at top and bottom of spoon.							
94.5 - 96.0	6-8-13 (10")	SP	Sand: Fine grained, well sorted.							
96.0 - 97.5	12-17- 19 (12")	SP	Sand: As above, slight increase in silt to 10%.							
97.5 - 99.0	12-20 34 (14")	SP	Sand: Fine grained, well sorted.							
99.0 - 100.5	20-38- 48 (18")	SP	Sand: As above.							
100.5 - 102.0	24-32- 34 (18")	SP	Sand: Very fine to fine grained, well sorted.							

LOGGED BY Jay S. Johnston DATE 09/29/09 CHECKED BY W.J. Powell (11659)

LOGGED BY Jay S. Johnston DATE 09/29/09 CHECKED BY W.J. Powell (11659)

Patrick Drilling

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois ~50' west southwest of Antioch MW-4, offset of PE-3		DRILLING METHOD 3 1/4" auger, 3" rotary		BORING NO PE-3A
		SAMPLING METHOD 24" Split-spoon, 18" samples		SHEET 8 of 8
Samples collected by Patrick Engineering		DRILLING		
WATER LEVEL		START	FINISH	
TIME		TIME	TIME	
DATE		DATE	DATE	
CASING DEPTH		09/25/89	09/28/89	

DRILL RIG CME 75 ATV SURFACE CONDITIONS Grassy area beside driveway.

ANGLE vertical BEARING

SAMPLE HAMMER TORQUE 140 FT-BLS

DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWSF/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
102.0 - 103.5	15-9-7	ML ----- CL	6" Silt: Massive, non-calcareous. 12" Clay: Massive, silty, calcareous, abrupt contact. End of Boring.							
103.5										

102.0 - 103.5	15-9-7	ML ----- CL	6" Silt: Massive, non-calcareous. 12" Clay: Massive, silty, calcareous, abrupt contact. End of Boring.							

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois			DRILLING METHOD			BOREHOLE NO. US-3D	
						SHEET 2 of 2	
			SAMPLING METHOD			DRILLING	
						START	FINISH
			WATER LEVEL			TIME	TIME
			TIME				
			DATE			DATE	DATE
DATUM MSL ELEVATION 767.19 *			CASING DEPTH				

DRILL RIG		SURFACE CONDITIONS					
ANGLE	BEARING	• Top of concrete pad					
SAMPLE HAMMER TORQUE							
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS	
						WATER CONTENT %	LIQUID LIMIT %
						PLASTIC	SPECIFIC GRAVITY
						OTHER TESTS	

40.5 - 42.0		CL	Clay (45%): Massive, silt (55%), trace sand, slightly calcareous, cohesive, plastic, SY 6/1 D, SY 4/1 W.				
43.0 - 44.5		CL	Clay: Silty, as above.				
80.0 - 81.5		SP	Sand: Fine grained, well sorted. Haeger Till.				

PRELIMINARY DRAFT
SUBJECT TO REVISION

W. J. Powell (WJP) DRILLING CONTR

Jay S. Johnston SL 30259 DATE 7/21/89

LOGGED BY Jay S. Johnston

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois DATUM MSL ELEVATION 767.19 *				DRILLING METHOD				BORING NO.			
								US-3D			
								SHEET 1 of 2			
				SAMPLING METHOD				DRILLING			
				Samples collected by Ecology and Environment				START	FINISH		
				WATER LEVEL				TIME	TIME		
				TIME							
				DATE				DATE	DATE		
CASING DEPTH											
DRILL RIG				SURFACE CONDITIONS							
ANGLE		BEARING		• Top of concrete pad							
SAMPLE HAMMER TORQUE											
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	TEST RESULTS			
			WATER CONTENT %	Liquid Limit %	Plastic			Specific Gravity	Other Tests		
7.5 - 9.0			Peat.								
11.5 - 13.0		SP	Silty clay - highly organic. pH. Sand (80%): Very fine grained, massive, well sorted, non-calcareous Silt (20%), 10YR 6/2.								
15.5 - 17.0	A	CL/SW	A. Clay (80%), Silt (20%): Moist, organic pockets, 2mm layers of sand, very poorly sorted, subangular to subrounded, 5YR 4/1 W/D.								
	B	GW	B. Gravel (50%): Subrounded to subangular dolomite-shale quartzite 1" - 1.5", sand (40%) very fine to coarse grained, very poorly sorted, silt (10%), 10YR 6/2 (d) 10YR 4/2 (w).								
20.5 - 22.0		GM	Silt (50%): Clayey, with gravel (30%), small to medium (3/4") dolomite shale quartzite, subangular to subrounded, sand (20%), very fine to coarse grained, subrounded, very poorly sorted, slightly calcareous, 10YR 4/2.								
30.5 - 32.0		SM/GW	Sand (40%): Very fine to coarse grained, subrounded to subangular. Gravel (30%): As above, to 1", silt (20%), clay (10%), very poorly sorted, very slightly calcareous, 5Y 4/1 D/W.								
35.5 - 37.0		SW	Sand (80%): very fine to coarse grained, subangular, poorly sorted, trace silt, gravel (20%), as above, non-calcareous to very slightly calcareous, 5Y 4/1 D.								
				<i>DO NOT USE THIS LOG</i> <i>FOR REVISION</i>							
LOGGED BY	Jay S. Johnston	DATE	7/21/89	CHKD BY	W. J. Powell (11/6/90)	DRILLING CONTR					

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois			DRILLING METHOD					BORING NO.	
								US-4D	
								SHEET 1 of 2	
			SAMPLING METHOD					DRILLING	
Samples collected by Ecology and Environment					START	FINISH			
WATER LEVEL					TIME	TIME			
TIME									
DATE					DATE	DATE			
DATUM	MSL	ELEVATION	770.68 LS		CASING DEPTH				

DRILL RIG			SURFACE CONDITIONS						
ANGLE		BEARING							
SAMPLE HAMMER TORQUE									
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS		
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC

7.5 - 9.0	2A	SP	2A Sand (70%): Fine to coarse grained, subrounded to subangular, non-calcareous, moderately sorted, subangular, shale clasts, subrounded dolomite clasts to 3/8", SYR 4/1 (D), SY 4/1 (W).							
	2B	----- OH -----	2B Clay: Brownish-black; organic, some medium sand and fine gravel.							
Continued	2C	GM/ SW	Gravel (40%): Fine, subrounded, dolomite pebbles, slightly calcareous. 15% silt: organic 45% sand: very fine to coarse grained, non-calcareous, subrounded to subangular, very poorly sorted.							
12.5 - 14.0		SW	Sand (90%): Poorly sorted, very fine to very coarse grained, subrounded to subangular. Gravel (5%): Small, subrounded, dolomite shale pebbles. 5% Silt: Slightly organic, clayey, SYR 4/1 D/W.							
17.5 - 19.0		SW	Sand (85%): Very fine to very coarse grained, subrounded, very poorly sorted. 5% Silt. 10% Gravel: Small, subrounded dolomite shale some 1" clasts. SY 6/1 (D) SY 4/1 (W).							
22.5 - 24.0		GW	Gravel (60%): Dolomite quartzite to 1/2", subrounded to subangular. Sand (40%): Very fine to very coarse grained, subrounded to subangular, some silt, poorly sorted.							
27.5 - 29.0		CL	Clay (50%): Massive. Silt (48%): Trace fine sand and fine gravel, SY 6/1 (D), SY 4/1 (W).							

DO NOT USE
THIS COPY
IS A DRAFT
TO PRECISION

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois			DRILLING METHOD					BORING NO. US-4D	
								SHEET 2 of 2	
Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois			SAMPLING METHOD					DRILLING	
			Samples collected by Ecology and Environment					DRILLING	
DATUM MSL ELEVATION 770.68 LS			WATER LEVEL					START	FINISH
			TIME					TIME	TIME
			DATE					DATE	DATE
			CASING DEPTH						

DRILL RIG			SURFACE CONDITIONS						
ANGLE		BEARING							
SAMPLE HAMMER TORQUE									
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL				SAMPLER & BIT	CASING TYPE	TEST RESULTS
								BLOWS/FOOT ON CASING	WATER CONTENT % LIQUID LIMIT % PLASTIC SPECIFIC GRAVITY OTHER TESTS
32.5 - 34.0	A B	CL SW	A. Clay: As above. B. Sand (60%): Very fine to very coarse grained, subangular, very poorly sorted. Gravel (20%): Fine grained, subrounded, shale and dolomite pebbles. Silt (15%), Clay (5%), 5Y 6/1 (D), 5Y 4/1 (W).						
60.0 - 61.5		CL	Clay (50%): Soft, plastic, massive, silty (45%), trace fine sand and fine grained gravel, 5YR 6/1 (D), 5 YR 4/1 (W).						
70.0 - 71.5	A B	ML SP	A. Silt (90%): Massive with 10% clay, 10YR 6/2 (W). Sand: Very fine grained, well sorted, 10YR 8/2 (D).						
75.0 - 76.5		CL	Clay (60%): Massive. Silt (40%): Silt rich layers (2mm) - irregular, convolute (deformation structures).						
80.0 - 81.5		SP	Sand: Very fine to fine grained, well sorted. Silty clay rich zones. Top of Haeger Member of Wedron Formation.						
90.0 - 91.5			Sand. Haeger Member.						

LOGGED BY	J.S. Johnston	DATE	7/20/89	CHK'D BY	W.J.Powell(1/1690)	DRILLING CONTR	P.E.LAMOREAUX & ASSOCIATES, INC. (PELA)			
							DRAFT	SUBJECT TO REVISION	P.E.LAMOREAUX & ASSOCIATES, INC. (PELA)	

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois					DRILLING METHOD: 4 1/4 ID HSA					BORING NO. W3SB				
					SAMPLING METHOD: 2" OD SPLIT SPOON									
										SHEET 1 OF 1				
										DRILLING				
										START	FINISH			
										TIME	TIME			
										DATE	DATE			
										4/7/93	4/7/93			
BORING LOCATION: NE 1/4 of NE 1/4 of Section 17, T 46 N, R 10 E/W														
NORTHING 2115189.4 EASTING 1051027.8														
DATUM ELEVATION 763.7														
DRILL RIG CME 750 ATV					SURFACE CONDITIONS MARSH/WETLAND, SURFACE WATER									
ANGLE Vertical BEARING -----														
SAMPLE HAMMER TORQUE FT-LBS														
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL		SAMPLE NUMBER AND DESCRIPTION OF MATERIALS			SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
											WATER CONTENT %	LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY
5					Blind Drill to 16 Feet See Boring Log W3SA for Geologic Description to 16 Feet									
10														
15					Loose Gray Fine to Coarse SAND (SP), Trace Silt, Grades to Fine to Medium Sand to 19 Feet Then Fine to Coarse			SS						
17.7	WT/12"	100		1										
20	2356	100		2	Loose Gray-Brown Fine to Coarse SAND (SP) Little Fine Gravel, and Silt, Trace Clay			SS						
23	2355	63		3										
25	6877	42		4	Medium Dense Fine to Coarse SAND (SP), Trace to Little Fine Gravel and Silt 3" Gray Silty CLAY Layer at 26'			SS						
27.7	611 1311	58		5										
28	6976	42		6	Very Stiff Gray Silty CLAY (CL), Trace Medium to Coarse Sand, Trace to Little Fine Sand, Grades to Clayey Silty CLAY (CL/ML), Shale Fragments Present			SS						
30	6976	71		7										
31.7	3466	67	██████████	8	End of Boring at 32 Feet Monitoring Well Set at 29.5 Feet PID = None Detected			SS						
33														
LOGGED BY <u>SJC</u>										DRILLING CONTR <u>E & F</u>				
DATE <u>9/22/93</u>					CHK'D BY <u>DAP</u>					<u>CHAS. MARKGRAF</u>				
										ID: WM1				

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 6" RB WITH MUD				BORING NO. W3D					
				SAMPLING METHOD: 2" SPLIT SPOON, SHELBY TUBE (34.5 - 38 FT)				SHEET 1 OF 2					
								DRILLING					
				WATER LEVEL					START	FINISH			
				TIME					TIME	TIME			
				DATE					DATE	DATE			
				CASING DEPTH					4/8/93	5/25/93			
BORING LOCATION: NE 1/4 of NE 1/4 of Section 17 , T 46 N, R 10 E/W NORTHING 2115187.6 EASTING 1051022.7 DATUM ELEVATION 763.7				SURFACE CONDITIONS MARSH/WETLAND WET									
DRILL RIG CME750 ATV/Track Rig ANGLE Vertical BEARING ----- SAMPLE HAMMER TORQUE FT-LBS													
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	TEST RESULTS			
				WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY			OTHER TESTS			
5				Blind Drill to 34.5 Feet See Logs W3SA and W3SB for Geologic Descriptions of Upper 35 Feet									
10													
15													
20													
25													
30				Gray Silty CLAY (CL)									
35	729.2	-	17	Shelby Tube 34.5 to 36.5, Pushed Rocks and Gravel in End of Tube (Tube Destroyed)				SS					-
		-	0					SS					
LOGGED BY <u>SJC</u>				DRILLING CONTR <u>E & F, ETI</u>									
DATE <u>9/22/93</u>				CHK'D BY <u>DAP</u>				CM/JR					
												ID:WM1	

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

SHEET

2 OF 2

BORING NO.

W3D

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois				DRILLING METHOD				BORING NO. US-6D	
								SHEET 1 of 2	
				SAMPLING METHOD Samples collected by Ecology and Environment				DRILLING	
								START	FINISH
				WATER LEVEL				TIME	TIME
				TIME					
				DATE				DATE	DATE
DATUM MSL ELEVATION 767.01 *				CASING DEPTH					

DRILL RIG		SURFACE CONDITIONS							
ANGLE	BEARING	Top of concrete pad							

SAMPLE HAMMER TORQUE									
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DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS			
						BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT %	PLASTIC

7.0 - 8.5		OH	Topsoil: Dark brown, organic, silty, few dolomite pebbles, SYR 2/1.								
15.0 - 16.5		OH	Clay (50%) - Silt (40%) - Dark brown, organic, rich, non-calcareous, SY 4/1.								
20.0 - 21.5		SP	Sand (95%): Fine to medium grained, well sorted, non-calcareous, subrounded, trace coarse sand, some rounded small dolomite gravel, 10YR 5/4 DW.								
25.0 - 26.5		GW	Gravel (75%) with sand (20%) fine to coarse, poorly sorted, subangular to subrounded, gravel - fine rounded dolomite to shale; shale flat, more angular, very slightly calcareous, 10YR 6/2 (D), 10YR 4/2 (W).								
30.0 - 31.5		SP	Sand (90%): Very fine to medium grained, well sorted, subrounded. 10% Silt, 10YR 7/4 (D), 10YR 6/2 (W).								
35.0 - 36.5		SP	Sand (80%): Very coarse, moderately sorted, subrounded, and gravel (20%) fine subrounded, dolomite and shale. Slightly calcareous, SY 7/2, SYR 7/2.								

CHKD BY Jay S. Johnson DATE 07/20/89 DRILLING CONTR W.J. Powell (1/16/90)

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois				DRILLING METHOD				BOREHOLE NO. US-6D	
				SAMPLING METHOD				SHEET 2 of 2	
				Samples collected by Ecology and Environment					
				DRILLING					
				START	FINISH				
WATER LEVEL						TIME	TIME		
TIME									
DATE						DATE	DATE		
CASING DEPTH									
DATUM MSL ELEVATION	767.01								

DRILL RIG		SURFACE CONDITIONS							
ANGLE	BEARING	• Top of concrete pad							
SAMPLE HAMMER TORQUE									
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN ON SAMPLER	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS		
							WATER CONTENT %	Liquid Limit %	PLASTIC

40.0 - 41.5		GW	Gravel (90%): Fine-medium grained, subrounded, dolomite and shale. Sand (10%): Very coarse grained, as above, 5YR 7/2, SYR 5/2.						
45.0 - 46.5		ML	Silt (30%): Calcareous, with very poorly sorted, sand . Gravel (10%): Fine, medium, subrounded, dolomite-shale. 10YR 6/2 (D).						
		CL	Clay (30%): SYR 5/2 (W). Sand (30%): Very fine to coarse grained, subrounded.						
55.0 - 56.5		CL	Clay (45%) - Silty (50%), massive, 5% fine dolomite shale pebbles. 5YR 6/1 (D), 5Y 4/1 (W).						
57.0 - 59.0		SM	2" Sand (50%), medium to coarse grained, subrounded, silty (45%). 5% small dolomite pebbles, 10YR 6/2 (D), 10YR 6/2 (W).						
		ML	2" Silt - irregular 2mm seams of interstratified silt and clay rich layers - small microfractures to 4mm, subvertical-displacement, SY 6/1 (D), 5Y 4/1 (W).						
		CL	2" Clay: Silty, as above, 60% clay, no gravel, plastic.						
72.0 - 73.5		CL	Clay (60%) - Slightly calcareous, plastic, massive, silty sand increasing to base, 5YR 6/1. Silt (30%) Sand (5%): Very fine grained, subrounded. Gravel (5%): Fine dolomite-quartzite.						
74.5 - 76.0		SP	Sand (95%) - Fine to coarse grained, moderately sorted, varied lithology, some fine gravel, non-calcareous, Haeger Till.						

PRELIMINARY DRAFT
SUBJECT TO REVISION

LOGGED BY Jay S. Johnston DATE 07/20/89 CHKD BY W. J. Powell (11/16/90) DRILLING CONTR

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois South-Central portion of landfill northeast of US-6D		DRILLING METHOD Hollow-stem auger				BORING NO. PZ-3U
						SHEET 1 of 4
		SAMPLING METHOD Split Spoon, 24" samples				DRILLING
						START FINISH
		WATER LEVEL	3.30	fbmp		TIME TIME
		TIME	10:26			10:30 3:00
		DATE	3/19/90			DATE DATE
DATUM MSL ELEVATION 763.59 LS		CASING DEPTH				3/5/90 3/5/90

DRILL RIG CME 55 ATV	SURFACE CONDITIONS Peat marsh									
ANGLE vertical	BEARING									
SAMPLE HAMMER TORQUE 140	ft./BLS									
DEPTH IN FEET (ELEVATION)	BLOWS/ IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT*	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY

1.0 - 3.0	1,1,1, 0 (4")		Topsoil/Fill.								
3.0 - 5.0	1,2,3, 5 (8")	OL	Peat/Topsoil: Organic silt - soft, clayey, dark olive gray (5Y 3/1).								
5.0 - 7.0	1,1,2, 5 (8")	ML	3" Organic Silt: As above. 5" Organic Silt: 30% very fine grained sand, medium light gray (N6). Fsc.								
7.0 - 9.0	8,7,6, 8 (10")	SP	3" Organic Silt: As above. Fsc. 7" Sand: Fine to coarse grained, well sorted, pale yellowish-brown (10YR 6/2). Sr.								
9.0 - 11.0	4,3,6, 7 (10")	SP ---- CL	Sand: Fine to very coarse grained, moderately sorted, pale yellowish-brown (10YR 6/2), with 2" to 3" layers of sandy clay, dense, medium gray (N5). Sr.								
11.0 - 13.0	5,6,8, 9 (5")	SP	Sand: Very fine to coarse grained, moderately sorted with 5% granules, light to moderate olive gray (5Y 5/1). SL.								

Patrick Drilling

DRILLING CONTR

W. J. Powell

CHK'D BY

Jay S. Johnston

SL30228

DATE

LOGGED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois South-Central portion of landfill northeast of US-6D				DRILLING METHOD Hollow-stem auger				BORING NO. PZ-3U	
								SHEET 2 of 4	
				SAMPLING METHOD Split Spoon, 24" samples				DRILLING	
								START	FINISH
				WATER LEVEL	3.30	fmp		TIME	TIME
				TIME	10:26			10:30	3:00
				DATE	3/19/90			DATE	DATE
DATUM MSL ELEVATION 763.59 LS				CASING DEPTH				3/5/90	3/5/90

DRILL RIG CME 55 ATV			SURFACE CONDITIONS Peat marsh					
ANGLE vertical	BEARING							
SAMPLE HAMMER TORQUE 140 ft./BLS								

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	BLOWSFoot ON CASING	TEST RESULTS			
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13.0 - 15.0	6, 6, 7, 8 (15")	SW ---- GC	Sand: Very fine to very coarse grained with 20% gravel to 1/2". 3" Layers of very clayey, dense gravel to 1/4", subangular, poorly sorted, light to moderate olive gray (5Y 5/1). Dcs.							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
15.0 - 17.0	5, 8, 8, 8 (12")	SW	Sand: Very fine to very coarse grained, poorly sorted with 10% gravel to 1/3". 6" Zone of sand, very clayey, silty, dense. Clay in base of spoon, light to moderate olive gray (SY 5/1). Dcs.											
17.0 - 19.0	9, 9, 9, 13 (12")	SW	Sand: Very fine to very coarse grained, poorly sorted, with 10% gravel to 1 1/2", light to moderate olive gray (5Y 5/1). Dcs.											
19.0 - 21.0	8, 9, 12, 14 (20")	SW ---- SP	Sand: Very fine to very coarse grained, poorly sorted with gravel to 1/2", clayey. 3" Layers of silty sand, very fine to fine grained, light to moderate olive gray (5Y 5/1). Dcs.											
21.0 - 23.0	8, 9, 12, 15 (20")	SP	18" Sand: Very fine to very coarse grained, moderately sorted with 10% gravel to 1/2", some silty, trace clay. Dcs. 2" Sand: Very fine grained, silty, well sorted, medium gray (NS). Sg.											
23.0 - 25.0	5, 6, 7, 8 (15")	SP	8" Sand: Very fine to coarse grained with 10% granules, trace fine gravel, moderately sorted. Sg. 7" Sand: Very fine grained, silty, well sorted, medium gray (NS). Irregular, abrupt contact. Sm.											

Patrick Drilling

DRILLING CONTR

W.J. Powell 3/30/90

C/H/K/D BY

DATE 3/5/90

LOGGED BY Jay S. Johnson

SL30229

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois South-Central portion of landfill northeast of US-6D				DRILLING METHOD Hollow-stem auger				BORING NO. PZ-3U	
								SHEET 3 of 4	
				SAMPLING METHOD Split Spoon, 24" samples				DRILLING	
								START	FINISH
				WATER LEVEL	3.30	fbmp		TIME	TIME
				TIME	10:26			10:30	3:00
				DATE	3/19/90			DATE	DATE
DATUM	MSL	ELEVATION	763.59 LS	CASING DEPTH				3/5/90	3/5/90

DRILL RIG CME 55 ATV			SURFACE CONDITIONS Peat marsh							
ANGLE vertical BEARING										
SAMPLE HAMMER TORQUE 140 ft./BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY

25.0 - 26.5	12, 11, 12 (18")	SP	12" Sand: Very fine to medium grained, clayey, silty, with 5% granules and trace of gravel to 1/4", medium gray (NS). Sg. 6" Sand: Very fine grained, well sorted, with 1/8" laminated silty layers. Sr.								
27.0 - 29.0	11, 11, 11, 10 (14")	SW	Sand: Very fine to very coarse grained, clayey, silty in part, poorly sorted, with 20% gravel to 2", light to moderate olive gray (SY 5/1). Dcs.								
29.0 - 31.0	6, 11 (20")	SW	Sand: Very fine to very coarse grained, clayey, silty in part, with 40% gravel to 1", poorly sorted, light to moderate olive gray (SY 5/1). Dcs.								
31.0 - 33.0	6, 11, 13, 18 ---- GW	SW	Sand (40%): Very fine to very coarse grained, poorly sorted, with 40% gravel to 2", silty, light to moderate olive gray (SY 5/1). Dcs.								
33.0 - 35.0			Augered. Did not sample.								
35.0 - 37.0	8, 10, 11, 11 (8")	GP	Gravel (60%): Fine to medium grained to 1/2", subangular, with Sand (30%): Very fine to very coarse grained, silty, poorly sorted, light to moderate olive gray (SY 5/1). Dcs.								

Patrick Drilling

DRILLING CONTR

W.J. Powell 3/30/90

DATE

3/5/90

SL30230

LOGGED BY

Jay S. Johnson

MODIFIED FROM WASTE MANAGEMENT, INC.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois South-Central portion of landfill northeast of US-6D				DRILLING METHOD Hollow-stem auger					BORING NO.		
									PZ-3U		
									SHEET		
									4 of 4		
				SAMPLING METHOD Split Spoon, 24" samples					DRILLING		
									START	FINISH	
				WATER LEVEL		3.30	fbmp			TIME	TIME
				TIME		10:26				10:30	3:00
				DATE		3/19/90				DATE	DATE
				CASING DEPTH						3/5/90	3/5/90
DATUM	MSL	ELEVATION	763.59 LS								
DRILL RIG CME 55 ATV				SURFACE CONDITIONS Peat marsh							
ANGLE	vertical	BEARING									
SAMPLE HAMMER TORQUE 140 ft./BLS											
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS		
									WATER CONTENT %	LIQUID LIMIT %	PLASTIC
37.0 - 39.0	11, 8, 15, 18 (12")	CL	4" Gravel: As above. 8" Clay: Silty, dense, massive, light olive gray (5Y 6/1). Dmm.								
39.0 - 41.0	5, 8, 12, 14 (24")	CL	Clay: Silty, dense, massive, light olive gray (5Y 6/1). Dmm.								
Total Depth: 41.0'											

SOIL BOREHOLE LOG

SITE NAME AND LOCATION	DRILLING METHOD Hollow-stem auger	BORING NO.
H.O.D. Landfill Antioch, Illinois		PZ-4U
South-Central portion of landfill northeast of LB-9		SHEET 1 of 3
	SAMPLING METHOD Split Spoon, 24' samples	

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	START	FINISH	TEST RESULTS	DRILLING CONTR
				WATER LEVEL	TIME		
0.0- 3.0 (2)	1, 1, 2, PT	Peat/Topsoil:	Brownish-black (SYR 2/1).	3.49	ft.mph		
3.0- 5.0 (7)	1, 1, 2, PT ML	3° Peat. 4° Organic Silt:	Clayey sandy, mottled, medium gray (NS). Fsc.				
5.0- 7.0 (4)	10, 8, 2, PT	Peat: Brownish-black (SYR 2/1). Fsc.					
7.0- 9.0 (4)	2, 2, 4, CL		24° Clay: Massive, silty dense, light olive gray (SY 6/1), trace 1/4" gravel, some sandy zones. Dmm(0).				
9.0- 11.0 (5)	2, 3, 3, CL		6° Sand: Graded, medium to very coarse grained, grading to fine gravel with 30%, as above. Sq.				
11.0- 13.0 (6)	6, 5, 5, SP		11° Sand: Fine to medium grained, well sorted, with trace 1/4" gravel, silty, light olive gray (SY 6/1). St.				

ANGLE	VERTICAL	BEARING	SURFACE CONDITIONS	Peat marsh	
SAMPLE HAMMER TORQUE	140	ft./BLS	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE
DEPTH IN FEET (ELEVATION)	ANGLE	VERTICAL	SYMBOL	BLOWS/FOOT ON CASING	WATER CONTENT %
0.0- 3.0 (2)	1, 1, 2, PT	Peat/Topsoil:	Brownish-black (SYR 2/1).		
3.0- 5.0 (7)	1, 1, 2, PT ML	3° Peat. 4° Organic Silt:	Clayey sandy, mottled, medium gray (NS). Fsc.		
5.0- 7.0 (4)	10, 8, 2, PT	Peat: Brownish-black (SYR 2/1). Fsc.			
7.0- 9.0 (4)	2, 2, 4, CL		24° Clay: Massive, silty dense, light olive gray (SY 6/1), trace 1/4" gravel, some sandy zones. Dmm(0).		
9.0- 11.0 (5)	2, 3, 3, CL		6° Sand: Graded, medium to very coarse grained, grading to fine gravel with 30%, as above. Sq.		
11.0- 13.0 (6)	6, 5, 5, SP		11° Sand: Fine to medium grained, well sorted, with trace 1/4" gravel, silty, light olive gray (SY 6/1). St.		

Specimen from Framework Fill
Identified from Waste Management Inc.

LOGGED BY Jay S. Johnston

SL30232

DATE 3/6/90

CHK'D BY

W. J. Powell 3/30/90

DRILLING CONTR

Patrick Drilling

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois South-Central portion of landfill northeast of LB-9		DRILLING METHOD Hollow-stem auger				BORING NO. PZ-4U	
						SHEET 2 of 3	
		SAMPLING METHOD Split Spoon, 24" samples				DRILLING	
						START	FINISH
		WATER LEVEL	3.49	fbmp		TIME	TIME
		TIME	10:35			10:50	1:30
		DATE	3/19/90			DATE	DATE
DATUM MSL ELEVATION 763.36 LS		CASING DEPTH				3/6/90	3/6/90

DRILL RIG CME 55 ATV			SURFACE CONDITIONS Peat marsh				
ANGLE	vertical	BEARING					
SAMPLE HAMMER TORQUE	140	ft./BLS					
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS

13.0 - 15.0	6, 6, 9, 11 (20")	SP	Sand: Very fine to coarse grained, with trace granules, silty in part. 3" Zones of gravelly sand, moderately to well sorted, light olive gray (5Y 6/1). St.				
15.0 - 17.0	3, 4, 7, 7 (20")		Sand: As above.				
17.0 - 19.0	9, 9, 8, 9 (20")	SP	6" Sand: As above. St. 3" Sand: Very fine to coarse grained. Sg. 8" Sand: Very fine to coarse grained, trace 1/4" gravel, moderately sorted. Sg. 3" Sand: Very fine grained, silty, light olive gray (5Y 6/1), abrupt contacts. Sr.				
19.0 - 21.0	6, 8, 9, 10 (20")	SP	10" Sand: Fine to coarse grained, well sorted, trace granules, trace gravel to 1". Sg. 6" Sand: Very fine grained, silty, dense. Sm. 4" Sand: Very fine to very coarse grained, with 5% granules, moderately sorted, light olive gray (5Y 6/1). St.				
21.0 - 23.0	9, 10, 12, 14 (14")	SW	Gravel: Fine to medium grained to 1.5", with 20% Sand: Medium to coarse grained, moderate to poorly sorted, light olive gray (5Y 6/1). Gm.				
23.0 - 25.0			Augered - Did not sample.				

PRELIMINARY DRAFT
SUBJECT TO REVISION

Patrick Drilling

DRILLING CONTR

W.J. Powell 3/30/90

CHK'D BY

3/6/90

Jay S. Johnson

DATE

3/6/90

LOGGED BY

Lamoreaux

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois South-Central portion of landfill northeast of LB-9				DRILLING METHOD Hollow-stem auger				BORING NO. PZ-4U	
								SHEET 3 of 3	
SAMPLING METHOD Split Spoon, 24" samples								DRILLING	
								START	FINISH
WATER LEVEL 3.49 ft.m.p.								TIME	TIME
TIME 10:35								10:50	1:30
DATE 3/19/90								DATE	DATE
CASING DEPTH								3/6/90	3/6/90
DATUM MSL ELEVATION 763.36 LS									

DRILL RIG CME 55 ATV	SURFACE CONDITIONS Peat marsh										
ANGLE vertical	BEARING										
SAMPLE HAMMER TORQUE 140	ft./BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS

25.0 - 27.0	6, 7, 7, 8 (12")	CL	6" Gravel: As above. Gm. 6" Clay: Massive, silty, dense, light olive gray (5Y 6/1). Dmm.							
27.0 - 29.0	6, 7, 9, 12 (12")	CL	Clay: Massive, silty, dense, with trace gravel to 1/4", light olive gray (5Y 6/1). Dmm.							
29.0 - 31.0	5, 6, 9, 11 (16")	CL	Clay: Silty, massive, dense, with trace gravel to 1/8", light olive gray (5Y 6/1). Dmm.							
31.0 - 33.0	8, 10, 16, 11 (24")	CL	Clay: As above. Dmm.							
			Total Depth: 33.0'							

PRELIMINARY DRAFT
SUBJECT TO REVISION

Patrick Drilling

DRILLING CONTR

W. J. Powell 3/20/90

CHKD BY 3/6/90 DATE

Jay S. Johnston SL30234

LOGGED BY

SOIL BOREHOLE LOG											
SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill DATUM MSL ELEVATION 760.93' LS				DRILLING METHOD Hollow-stem auger/rotary			BORING NO. LB-9 (B-4)				
							SHEET 1 of 9				
				SAMPLING METHOD 2" O.D. Split spoon			DRILLING				
							START	FINISH			
				WATER LEVEL			TIME	TIME			
				TIME			9:37 AM	3:00 PM			
				DATE			DATE	DATE			
CASING DEPTH			9/5/89	9/8/89							
DRILL RIG CME 75 ATV				SURFACE CONDITIONS In peat bog							
ANGLE Vertical		BEARING									
SAMPLE HAMMER TORQUE 140 FT-BLS				OTHER TESTS G = grain size; P = permeability							
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		SAMPLER & BIT	CASING TYPE	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
0 - 1.0			Not sampled.								
1.0 - 2.5	(0.0)		No recovery.								
2.5 - 4.0	(0.2)	Pt	Peat, black, soft, moist with abundant organic material. N1								
4.0 - 5.5	(0.2)	Pt	Peat, as above, except clayey.								
5.5 - 7.0	(1.5)	OH	Clay, dark gray, moist, very plastic, with organic material. N3, Fsc								
7.0 - 8.5	(1.3)	OH/ SM	Upper 1.0' clay, as above; lower 0.3' sand, medium dark gray, fine to medium grained, subrounded, well sorted, silty, moist. N4, Fsc - Sm								

~~INITIAL SURVEY DRAFT
SUBJECT TO REVISION~~

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill				DRILLING METHOD Hollow-stem auger/rotary				BORENG NO. LB-9 (B-4)			
								SHEET 2 of 9			
				SAMPLING METHOD 2" O.D. Split spoon				DRILLING			
								START	FINISH		
				WATER LEVEL				TIME	TIME		
				TIME				9:37 AM	3:00 PM		
				DATE				DATE	DATE		
				CASING DEPTH				9/5/89	9/8/89		
CATUM MSL ELEVATION 760.93' LS				SURFACE CONDITIONS In peat bog							
DRILL RIG CME 75 ATV				SURFACE CONDITIONS In peat bog							
ANGLE Vertical		BEARING									
SAMPLE HAMMER TORQUE 140 FT-BLS				OTHER TESTS G = grain size; P = permeability							
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	BLOW/S/FOOT ON CASING	TEST RESULTS		
									WATER CONTENT %	Liquid LIMIT %	PLASTIC
8.5 - 10.0	3-3-1 (1.2)	SM	Sand, medium dark gray, fine to very coarse grained, moderately to poorly sorted, subangular to subrounded, silty, clayey at center, moist. N4, Sm								G P
10.0 - 11.5	Wt of hammer 2-2 (1.5)	SW CL	Upper 1.3' sand (90%), medium dark gray, fine to very coarse grained, subangular to subrounded, grain size decreasing toward base, clayey toward base, moderately to poorly sorted; lower 0.2' clay, medium dark gray, silty, 10% very fine grained sand, trace organic material. N4, Sg - Fm								G P
11.5 - 13.0	2-2-1 (1.2)	SM CL	Upper 0.4' sand, as above; lower 0.8' clay, as above. Sg - Fm								
13.0 - 14.5	3-4-6 (1.5)	CL/ SM	Clay, medium dark gray, moist, 25% fine to coarse sand, trace gravel; lower 0.2' sand, fine to very coarse grained, subangular to subrounded with 20% fine gravel, moist, clayey, medium dark gray. N4, Dmg - Dcg								
14.5 - 16.0	1-9-8 (1.0)	SP	Sand (45%), fine to very coarse grained, subangular to subrounded; gravel (45%), fine to medium grained, subangular; clay and silt (10%); poorly sorted. Dcg								G P
16.0 - 17.5	4-8-9 (1.0)	GC	Sand (50%), very fine to coarse grained, angular to subrounded; gravel (30%), fine to medium grained, angular; clay (20%); brownish-gray, poorly sorted, moist. SYR 4/1, Dcg								G P

Patrick Drilling

W. J. Powell, 1/16/90 DRILLING CONTR

LOGGED BY Neill Ross SL 30162 DATE 9/5/89 BY CLIK'D BY

DRAFT

TO BE REVIEWED

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill				DRILLING METHOD Hollow-stem auger/rotary	BORING NO. LB-9 (B-4)	
				SAMPLING METHOD 2" O.D. Split spoon	SHEET 3 of 9	
					DRILLING	
					START	FINISH
				WATER LEVEL	TIME	TIME
				TIME	9:37 AM	3:00 PM
				DATE	DATE	DATE
DATUM MSL ELEVATION 760.93' LS				CASING DEPTH	9/5/89	9.8.89

DRILL RIG CME 75 ATV			SURFACE CONDITIONS In peat bog				
ANGLE Vertical	BEARING						
SAMPLE HAMMER TORQUE	140 FT-BLS		OTHER TESTS G = grain size; P = permeability				
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS

17.5 - 19.0	5-7-9 (1.2)	GC	Upper 0.6' gravel (50%), as above, and sand (50%) as above; lower 0.6' sand (40%), as above; gravel (30%), as above, and clay (30%), as above. Dcg				G P
19.0 - 20.5	8-5-8 (0.0)		No recovery.				
20.5 - 22.0	--7-8 (1.3)	CL	Clay, brownish-gray, stiff, with trace coarse sand, subrounded. SYR 4/1, Dmm(r)				
22.0 - 23.5	3-6-9 (1.4)	CL	Clay, brownish-gray, stiff, with trace coarse sand and fine gravel; 0.2' silt to very fine grained sand in upper 0.5' of sample. SYR 4/1, Dmm(r)				
23.5 - 25.0	3-8-13 (1.3)	CL/ GC	Upper 1.1' clay, as above; lower 0.2' sand (40%), fine to very coarse grained, angular to subrounded; gravel (40%), fine grained, angular; clay (20%), sample poorly sorted. Dmm(r) - Dcm				
25.0 - 26.5	2-5-9 (1.0)	GC	Gravel (50%), up to 0.1' in diameter, angular; sand (30%), fine to very coarse grained, angular to subrounded; clay (20%); sample poorly sorted, moist. Dcm				D G

PRELIMINARY DRAFT
SUBJECT TO REVISION

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill				DRILLING METHOD Hollow-stem auger/rotary				BORING NO. LB-9 (B-4)	
								SHEET 4 of 9	
				SAMPLING METHOD 2" O.D. Split spoon				DRILLING	
								START	FINISH
								TIME	TIME
								9:37 AM	3:00 PM
								DATE	DATE
				CASING DEPTH				9/5/89	9/8/89
DATUM MSL ELEVATION 760.93' LS									
DRILL RIG CME 75 ATV				SURFACE CONDITIONS In peat bog					
ANGLE Vertical		BEARING							
SAMPLE HAMMER TORQUE 140 FT-BLS				OTHER TESTS G = grain size; P = permeability					
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS		
				WATER CONTENT %	LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS	
26.5 - 28.0	10-13-1 4 (0.8)	GC	Sand (34%), as above; gravel (33%), as above; clay (33%); sample very poorly sorted, moist.				G	P	
28.0 - 29.5	5-9-12 (0.5)	GC	Same as 26.5 to 28.0 feet.				G	P	
29.5 - 31.0	8-15- 17 (0.2)	CP	Gravel (80%), same as 25.0 to 26.5 feet; sand (20%), same as 25.0 to 26.5 feet.						
31.0 - 32.5			Not sampled.						
32.5 - 34.0	6-9-11 (0.5)	GC	Gravel (50%), up to 0.08" in diameter, angular to subrounded; sand (25%), fine to very coarse grained, angular to subrounded; clay (25%); sample very poorly sorted, moist.						
34.0 - 35.5	4-8-12 (1.4)	CL	Clay, moderate brown to dark brownish-gray, stiff, hard, with 5% coarse sand and 5% fine gravel. SYR 4/4 - SYR 4/1, Dmm						

PRELIMINARY DRAFT
SUBJECT TO REVISION

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill				DRILLING METHOD Hollow-stem auger/rotary				BORING NO. LB-9 (B-4)			
				SAMPLING METHOD 2" O.D. Split spoon							
								SHEET 5 of 9			
								DRILLING			
								START	FINISH		
								TIME	TIME		
								9:37 AM	3:00 PM		
								DATE	DATE		
								9/5/89	9/8/89		
DATUM MSL ELEVATION 760.93' LS				CASING DEPTH							
DRILL RIG CME 75 ATV				SURFACE CONDITIONS In peat bog							
ANGLE Vertical		BEARING									
SAMPLE HAMMER TORQUE 140 FT-BLS				OTHER TESTS G = grain size; P = permeability							
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL				SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS	
										WATER CONTENT %	LIQUID LIMIT %

LOGGED BY	Neil Moss	SL 30165	DATE	9/5/89	CHKD BY	W. J. Powell, 1/16/90	DRILLING CONTR	Patriot Drilling
35.5 - 37.0	5-9-14 (1.4)	CL	Clay, as above.					
37.0 - 38.5	6-8-13 (1.5)	CL	Clay, same as 34.0 to 35.5 feet.					
38.5 - 40.0	5-15- 13 (1.1)	CL/ ML	Upper 0.4' clay, same as 34.0 to 35.5 feet; lower 0.7' silt, moderate brown to dark yellowish-brown, moist; a 0.05' zone of fine grained sand separates clay and silt. 5YR 4/4 - 10YR 4/2. Dmm - Dcg(c)					
40.0 - 41.5	2-5-12 (0.0)		No recovery.					
41.5 - 43.0	10-10-1 0 (0.5)	GC	Gravel (60%), up to 0.06' in diameter, mostly angular; sand (30%), fine to very coarse grained, angular to subrounded; clay (10%); sample poorly sorted, moist. Dcg(r)					
43.0 - 44.5	16-20-2 2 (0.5)	GC	As above.					

~~DO NOT USE THIS DRAFT
SUBJECT TO REVISION~~

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill				DRILLING METHOD Hollow-stem auger/rotary					BORING NO. LB-9 (B-4)				
									SHEET 6 of 9				
				SAMPLING METHOD 2" O.D. Split spoon									
									DRILLING				
									START	FINISH			
									TIME	TIME			
WATER LEVEL					9:37 AM	3:00 PM							
TIME													
DATE					DATE	DATE							
CASING DEPTH					9/5/89	9/8/89							
DATUM MSL ELEVATION 760.93' LS													
DRILL RIG CME 75 ATV				SURFACE CONDITIONS In peat bog									
ANGLE Vertical		BEARING											
SAMPLE HAMMER TORQUE 140 FT-BLS				OTHER TESTS				G = grain size; P = permeability					
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL				SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
										WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
44.5 - 46.0	8-15- 22 (0.4)	GC	Same as 41.5 to 43.0 feet.										
46.0 - 47.5	18-20-2 1 (0.0)		No recovery.										
47.5 - 49.0	14-20-1 8 (1.0)	SW	Sand (50%), very fine to very coarse grained, angular to subrounded; gravel (40%), mostly fine grained, angular to subrounded; clay (10%); sample is poorly sorted. Dcm(r)										
49.0 - 50.5	7-18- 20 (0.8)	GC	Sand (40%), gravel (40%), and clay (20%), as above.										G P
50.5 - 52.0	12-19-2 0 (0.8)	GC	Sand (40%), gravel (40%), and clay (20%), same as 47.5 to 49.0 feet.										G P
52.0 - 53.5	7-11- 19 (0.5)	GC	Gravel (40%), predominantly fine grained, angular to subrounded; and sand (40%), very fine to very coarse grained, angular to subrounded. Poorly sorted, clayey.										G P

**Preliminary DRAFT
SUBJECT TO REVISION**

Patrick Drilling

CHURCH BY W. J. POWELL WILSON DUBLIN COUNTY

DATE

10000

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill				DRILLING METHOD Hollow-stem auger/rotary				BORING NO. LB-9 (B-4)			
								SHEET 7 of 9			
				SAMPLING METHOD 2" O.D. Split spoon				DRILLING			
								START	FINISH		
				WATER LEVEL				TIME	TIME		
				TIME				9:37 AM	3:00 PM		
				DATE				DATE	DATE		
				CASING DEPTH				9/5/89	9/8/89		
DATUM MSL ELEVATION 760.93' LS				SURFACE CONDITIONS In peat bog							
DRILL RIG CME 75 ATV				ANGLE Vertical BEARING							
SAMPLE HAMMER TORQUE 140 FT-BLS				OTHER TESTS G = grain size; P = permeability							
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	TEST RESULTS			
								WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
53.5 - 55.0	12-9- 10 (0.7)	GC	Upper 0.2' sand (40%), gravel (40%), and clay (20%), same as 47.5 to 49.0 feet; lower 0.5' clay, brownish-gray, stiff, trace coarse sand and fine gravel. SYR 4/1, Dcm(r) - Dmg								
55.0 - 56.5	5-6-8 (1.5)	CL	Clay, medium dark gray, stiff, trace coarse sand. N4, Dmg								
56.5 - 58.0	2-5-6 (1.5)	CL	Clay, olive gray, stiff, slightly plastic, trace coarse sand and fine gravel. SY 4/1, Dmg								
58.0 - 59.5	3-7-7 (1.5)	CL	Clay, olive gray, 10% coarse sand and fine gravel at top grading to trace at base. Set hole plug seal at 55.0 to 59.5 feet below land surface. SY 4/1, Dmg								
59.5 - 61.0	--10-10 (1.3)	CL	Clay, medium dark gray to olive gray, stiff with coarse sand and fine gravel. N4 - SY 4/1, Dmm								
61.0 - 62.5	--8-8 (1.2)	CL	Clay, same as above.								

DO NOT USE

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill				DRILLING METHOD Hollow-stem auger/rotary	BORING NO. LB-9 (B-4)
					SHEET 8 of 9
SAMPLING METHOD 2" O.D. Split spoon				DRILLING	
				START	FINISH
WATER LEVEL				TIME	TIME
TIME				9:37 AM	3:00 PM
DATE				DATE	DATE
CASING DEPTH				9/5/89	9/8/89
DATUM MSL ELEVATION	760.93' LS				

DRILL RIG CME 75 ATV SURFACE CONDITIONS In peat bog

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140 FT-BLS OTHER TESTS G = grain size; P = permeability

DEPTH IN FEET (ELEVATION)	BLOW/S 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOW/S FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
62.5 - 64.0	8-10- 11 (1.2)	CL	Clay, medium dark gray to olive gray, stiff, silty in part with trace coarse sand. N4 - 5Y 4/1, Dmm								

64.0 - 65.5	13-14-1 9 (1.2)	SM	Sand, medium gray, silty, very fine to very coarse grained, predominantly fine grained, angular to subrounded, trace fine gravel; lower 0.2' silt to very fine grained sand, medium gray. NS, Dcg							
65.5 - 67.0	-- (0.0)		No recovery.							
67.0 - 68.5	15-17-1 7 (1.2)	ML/ SM	Upper 0.6' silt, medium gray with trace to 10% fine to coarse sand; next 0.4' sand, very fine to coarse grained, mostly fine grained, angular to subrounded; lower 0.2' silt and clay, medium dark gray. N4, Dcg - Dmg							
68.5 - 70.0	11-15-1 5 (1.2)	CL	Upper 1.0' clay, medium dark gray to olive gray, slightly silty; lower 0.2' clay with 20% gravel, up to 0.05' diameter, angular. N4 - 5Y 4/1, Dmg							
70.0 - 71.5	11-21-2 9 (1.5)	CL/ SP	Upper 1.0' clay, medium dark gray to dark olive gray, silty with trace to 5% sand and gravel; lower 0.5' sand, mostly fine to medium grained with 5% fine gravel. N4 - 5Y 4/1, Dmg							

PRELIMINARY DRAFT
SUBJECT TO REVISION

Panick Drilling

DRILLING CONTR

W.J. Powell, 1/16/90

CHKD BY

SL 30168 DATE 9/5/89

NutMoss

LOGGED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Near pond in southeast portion of landfill		DRILLING METHOD Hollow-stem auger/rotary		BORING ID. LB-9 (B-4)
				SHEET 9 of 9
SAMPLING METHOD 2" O.D. Split spoon				DRILLING
				START FINISH
WATER LEVEL				TIME TIME
TIME				9:37 AM 3:00 PM
DATE				DATE DATE
CASING DEPTH				9/5/89 9/8/89

DATUM MSL ELEVATION 760.93' LS

DRILL RIG CME 75 ATV	SURFACE CONDITIONS In peat bog						
ANGLE Vertical	BEARING						
SAMPLE HAMMER TORQUE 140 FT-BLS	OTHER TESTS G = grain size; P = permeability						
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS

71.5 - 73.0	11-19-1 4 (0.6)	SW	Sand, light brownish-gray, very fine to very coarse grained, mostly fine to medium grained, trace very fine gravel, moderately well to moderately poorly sorted, slightly silty. SY 6/1				
73.0 - 74.5	11-18-2 1 (0.8)	SW	Sand, as above with 25% subrounded fine gravel, poorly sorted.				
74.5 - 75.5			Not sampled.				
75.5 - 77.0	11-14-1 8	SW	Sand, light brownish-gray to light gray, very fine to very coarse grained, mostly coarse grained, angular to rounded, 25% subrounded fine grained gravel, slightly silty, poorly sorted. SYR 6/1 - N7				
77.0 - 78.0			Not sampled.				
78.0 - 79.5	16-17-1 9	SW	Same as 75.5 to 77.0 feet.				
79.5 - 80.0			Not sampled. Total depth 80.0 feet..				

PRELIMINARY DRAFT
SUBJECT TO REVISION

Patrick Drilling

DRILLING CONTR

W.J. Powell, 11/6/90

CHKD BY

SL 30169

LOGGED BY Neil Moss

9/5/89

DATE

**MONTGOMERY
WATSON**



LOG OF TEST BORING

Project H.O.D. Landfill - Antioch, Illinois

Location

Boring No. **G14D**

Job No.

Sheet 1 of 2

Surface Elevation 767.7

Northing: 2115619.4

Easting: 1053288.1

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES		
No.	Type	Rec. (in.)	Mois- ture	N Value	Depth (ft.)	qu (qa) (tsf)	PID (ppm)	Remarks
					Black Sandy TOPSOIL			
		9			Tough Brown and Gray Silty CLAY, Trace Fine Sand (CL)			
		5			Dense Brown Clayey SAND, Some Gravel (SC)			
		32			Very Tough Brown Silty CLAY, Trace Coarse Sand (CL)			
		25						
		22						
		21						
		30						
		12			Firm Gray Silty Fine SAND (SM)			
		35			Very Tough Gray Silty CLAY, Trace Fine Sand (CL)			
		35						
		40						
WATER LEVEL OBSERVATIONS						GENERAL NOTES		
While Drilling	13.0'	ft.	Upon Completion of Drilling	5.0'	ft.	Start Driller Logger Drill Method	5/7/74 TSC	End Chief Editor Rig TJM
Time After Drilling	24hrs							
Depth to Water	3.0'							
Depth to Cave in								
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.						C:\gi3\had10201 ID: DETROIT2		

**MONTGOMERY
WATSON**



LOG OF TEST BORING

Project H.O.D. Landfill - Antioch, Illinois

Location

Boring No. **G14D**
 Job No.
 Sheet **2 of 2**
 Surface Elevation **767.7**
 Northing: **2115619.4**
 Easting: **1053288.1**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES			
No.	Type	Rec. (in.)	Mois- ture	N Value		Depth (ft.)	qu (qa) (tsf)	PID (ppm)	Remarks
					Very Tough Gray Silty CLAY, Trace Coarse Sand and Fractured Rock. (CL)	38			
					Very Tough Gray Silty CLAY. Trace Fine Sand and Gravel (CL)	45			
					End of Boring at 50 Feet Installed Well 14s to 10 ft Installed Well 14d to 32 ft	24			
						50			
						55			
						60			
						65			
						70			
						75			
						80			
						85			

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

H.O.D. Landfill
Antioch, Illinois

Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois

DATUM MSL ELEVATION 765.88 *

DRILLING METHOD

BORING NO.

US-1D

SHEET
2 of 2

SAMPLING METHOD

Samples collected by Ecology and Environment

DRILLING

START FINISH

TIME TIME

TIME

DATE

DATE DATE

CASING DEPTH

DRILL RIG

SURFACE CONDITIONS

ANGLE

BEARING

* Top of concrete pad

SAMPLE HAMMER TORQUE

DEPTH IN FEET (ELEVATION)	BLOWS 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	Liquid Limit %	PLASTIC	SPECIFIC GRAVITY
30.0 - 31.5	GW SM		Gravel (40%): Medium to large subangular dolomite and sand (40%), fine to coarse grained, subangular to subrounded. Silt (20%): Poorly sorted, slightly calcareous.							
75.0 - 76.5	SM		Sand (80%) and Silt (20%): Sand very fine to medium grained, moderately sorted, very slightly calcareous, subangular to subrounded, SYR 8/4 (dry) SYR 7/2 (wet).							
80.0 - 81.5	SM SP		17A Clay (45%) and Silt (50%) with 5% small gravel - small dolomite pebbles, slightly calcareous, 5Y 5/2 (wet) 5Y 7/2 (dry). 17B Sand (80%) medium to coarse grained, moderately sorted, subrounded, 20% small rounded dolomite pebbles - Top of Haeger Member of Wedron Formation.							
85.0 - 86.5			Haeger Member.							

PRELIMINARY DRAFT
SUBJECT TO REVISION

LOGGED BY Jay S. Johnston DRILLING CONTR W.J. Powell(1/16/90)

LOGGED BY Jay S. Johnston DATE 7/20/89 SL 30255

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois	DRILLING METHOD	BORING NO.				
		US-1D				
	SAMPLING METHOD	SHEET 1 of 2				
		Samples collected by Ecology and Environment				
	DRILLING					
						START FINISH
	WATER LEVEL					TIME TIME
	TIME					
	DATE					DATE DATE
	CASING DEPTH					

DRILL RIG			SURFACE CONDITIONS	
ANGLE		BEARING		* Top of concrete pad
SAMPLE HAMMER TORQUE				
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SAMPLE SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT
TEST RESULTS			CASING TYPE	BLOWS/FOOT ON CASING
WATER CONTENT %		LIMIT %	PLASTIC	SPECIFIC GRAVITY
OTHER TESTS				

3.5 - 5.0	ML SW	Silt (50%): Very poorly sorted with sand (30%), very fine to fine grained, subrounded and gravel (10%), small dolomite pebbles, subrounded, clay (10%), non-calcareous, slightly oxidized with mottled silty zones, 10YR 6/6 (wet), 10YR 5/4 (dry).			
7.5 - 9.0	GM ML	Gravel (30%): Small dolomite, subrounded and shale - subangular with sand (30%), very fine to medium grained, silt (30%), subrounded to subangular, very poorly sorted, calcareous, clay (10%), 10YR 7/4 (dry), 10YR 4/2 (wet).			
14.0	GM ML GM	3A Gravel (30%): very poorly sorted, small dolomite, subrounded and shale with sand (25%), very fine to medium grained, subrounded to subangular; silt (30%), clay (15%), 10YR 5/4 (dry) 10YR 4/2 (wet) 3B Silt (50%): poorly sorted, clayey, calcareous, trace fine sand, 10YR 7/4 (dry) 10YR 4/2 (wet), gravel (30%), very small platy shale clasts, some subrounded dolomite pebbles, sand (5%), clay (15%).			
	ML/ CL	3C Silty clay (45%), massive, hard. Silt (50%) and gravel (5%) - dolomite shale subrounded to rounded. 5Y 7/2 (dry) 5Y 5/2 (wet).			
15.0 - 16.5	ML/ CL	Clay (45%) with silt (50%). < 5% small gravel, as above, 5Y 7/2 (dry) 5Y 5/2 (wet).			
25.0 - 26.5	SM CL	6A Sand (70%): Very fine grained with 5% small subrounded shale gravel, some fine grained sand, slightly calcareous, 20% silt, 5% clay, 5Y 7/2. 6B Silty Clay (45%): <5% very small gravel dolomite, subrounded to rounded, oriented 35 degrees, 5Y 7/2 (dry) 5Y 2/2 (wet).			

DRILLING CONTR

W. J. POWELL (1/16/30)

DATE 7/20/89

Jay S. Johnson — SL 30254

LOGGED BY

APPENDIX S-2

CROSS-SECTION B-B'

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois Note: EPA samples were described on 7/20/89 and 7/21/89 in Northbrook, Illinois			DRILLING METHOD			BORING NO.		
						US-5D		
						SHEET 1 of 3		
			SAMPLING METHOD			DRILLING		
			Samples collected by Ecology and Environment			START	FINISH	
						TIME	TIME	
WATER LEVEL								
TIME								
DATE								
CASING DEPTH								
DATUM MSL ELEVATION 765.19 *								
DRILL RIG			SURFACE CONDITIONS					
ANGLE		BEARING	* Top of concrete pad					
SAMPLE HAMMER TORQUE								
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS		
						BLOWS/FOOT ON CASING	WATER CONTENT %	Liquid Limit %
0								
2.5 - 4.0		CL OH	Clay: Oxidized, organic, with some pebbles, non-calcareous, 10YR 5/4.					
7.5 - 9.0		CL	Clay: Oxidized with mottled organic rich zones, slightly calcareous, some very fine limestone gravel, 10YR 5/4.					
10.5 - 12.0		CL	Clay (45%): Silty (55%), calcareous, with irregular silty layers at base (5mm) with abrupt contacts, very small limestone pebbles, 10YR 6/2.					
15.5 - 17.0		CL	Clay (70%) - Silty (30%), massive, plastic, cohesive, with mottled horizontal silty zones, trace coarse sand, very slightly calcareous, 5N.					
20.5 - 22.0		CL	Clay: As above, less mottling.					

DO NOT USE DRAFT COPY

SOIL BOREHOLE LOG										
SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois			DRILLING METHOD					BORING NO.		
								US-5D		
								SHEET		
								2 of 3		
			SAMPLING METHOD					DRILLING		
			Samples collected by Ecology and Environment					START	FINISH	
								TIME	TIME	
			WATER LEVEL							
			TIME					DATE	DATE	
			DATE							
CASING DEPTH										
DATUM MSL ELEVATION 765.19 *										
DRILL RIG				SURFACE CONDITIONS						
ANGLE		BEARING		Top of concrete pad						
SAMPLE HAMMER TORQUE										
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	TEST RESULTS		
								WATER CONTENT %	LIQUID LIMIT %	PLASTIC
30.5 - 32.0		CL	Clay: Same as 15.5 - 17.0, less mottling.							
45.0 - 46.5		CL	Clay (45%) - Silt (55%), massive, trace coarse sand, dense, 7N (D), 5N (W).							
55.0 - 56.5		CL	Clay (60%), silty, massive trace coarse sand, dense, very slightly calcareous, 5N.							
60.5 - 62.0		CL	Clay: As above, with mottled silty zones.							
70.0 - 71.5		CL	Clay (70%) - Silty (30%), dense, massive, slightly calcareous; with an increase in silt at base; irregular dipping contact, 7N.							
75.0 - 76.5		CL	Clay (45%), silty, dense, massive, slightly calcareous, some fine limestone gravel, 4N.							

DRILLING CONTR

W.J.Powell (WJ690)

SL 30263

DATE 07/21/89

LOGGED BY Jay S. Johnston

DRAFT SUBJECT TO REVISION

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois		DRILLING METHOD				BORING NO. US-5D	
						SHEET 3 of 3	
		SAMPLING METHOD				DRILLING	
		Samples collected by Ecology and Environment				START	FINISH
		WATER LEVEL				TIME	TIME
		TIME				DATE	DATE
		DATE					
DATUM MSL ELEVATION 765.19 *		CASING DEPTH					

DRILL RIG		SURFACE CONDITIONS					
ANGLE	BEARING	• Top of concrete pad					
SAMPLE HAMMER TORQUE							
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS		
					WATER CONTENT %	LIQUID LIMIT %	PLASTIC
					SPECIFIC GRAVITY	OTHER TESTS	

80.0 - 81.5	CL --- ML ---	Interstratified 1.5" layers of silty sand, silty clay, and silt, calcareous, abrupt irregular contacts clay layers are monted with silty zones, 10YR 6/2 (D), 10YR 4/2 (W).					
85.0 - 86.5	SP	Sand: Very fine grained, moderate to well sorted, with some small limestone gravel, 10YR 6/2.					
PRELIMINARY DRAFT SUBJECT TO REVISION							



LOG OF TEST BORING

Project H.O.D. Landfill
..... RI/FS
Location Antioch, Illinois

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE					P R O F I L E	VISUAL CLASSIFICATION and Remarks	S O I L T E L	SOIL PROPERTIES		
Number	Rec. E (in.)	Mois- ture	N Value	Depth (ft.)				qu (qa) (tsf)	PID (ppm)	
1	2		35	5		Firm gray fine to coarse SAND, moist				
2	10		6	10		FILL: Brown Silty CLAY, Trace Topsoil and Small Sand and Gravel				
3	6		7	15		Soft Gray Organic CLAY, Trace Fine Sand. (CL)				
4	14		21	20		Very Tough Brown and Gray Silty CLAY, Trace Pockets of Silt (CL)				
5	16		21	25		Hard Brown and Gray Silty CLAY, Trace Coarse Sand and Fine Gravel (CL)				
				30		End of Boring at 25 Feet Installed Well 11s to 10 ft Installed Well 11d to 20 ft				
				35						
				40						
				45						
				50						

WATER LEVEL OBSERVATIONS

While Drilling DRY Upon Completion of Drilling
Time After Drilling _____
Depth to Water _____
Depth to Cave in _____

Begin 5/8/74 End 5/8/74 Drill
Driller TSC Chief Rig
Logger Editor TJM
Drill Method

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill			DRILLING METHOD	Hollow-stem auger	BORING NO.	LB-7 (B-3)
			SAMPLING METHOD	Split spoon	SHEET	1 of 11
						DRILLING
			WATER LEVEL		START	FINISH
			TIME		TIME	
			DATE		DATE	
DATUM	MSL	ELEVATION	771.54' LS	CASING DEPTH	8/21/89	8/22/89

DRILL RIG	CME 75 - ATV	SURFACE CONDITIONS	Dry 15.0' from the easternmost bank of Sequoit Creek			
ANGLE	Vertical	BEARING				
SAMPLE HAMMER TORQUE			140 FT-BLS			

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS		
					BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT %	PLASTIC

0 - 1.0			Not sampled.					
1.0 - 2.5	... (5)	OL/ OH	1.0" organic topsoil with grass and rootlets; 3.0" fill material, clay, silty with 15% fine to coarse sand, olive gray. Pushed spoon 18.0". SY 6/1					
2.5 - 4.0	3-4-5 (18)	CL	Clay, silty, with 10% fine to coarse sand, mottled, disturbed sample, olive gray to medium gray. Fill. 5N - 5Y 6/1					
4.0 - 5.5	3-2-3	CL	Clay, as above to 4.7' - 5.0' clay, silty, dark yellowish-brown and medium gray. Fill. 5 N - 10YR 4/2					
5.5 - 7.0	---		No recovery.					
7.0 - 8.5	2-3-3	CL	Clay, silty, with 15% coarse to fine sand, moderately well to well rounded, layered with organic-rich silt, dusky yellow and medium gray. 5 N - SY 6/4, Fm					

SUBJECT TO REVISION

SOIL BOREHOLE LOG

SITE NAME AND LOCATION		DRILLING METHOD Hollow-stem auger		BORING NO.	
HOD Landfill Antioch, Illinois				LB-7 (B-3)	
Western boundary of landfill		SHEET	2 of 11		
		SAMPLING METHOD	Split spoon		
DEPTH IN FEET (ELEVATION)	ANGLE (ELEVATION)	ANGLE	BEARING	DRILLING	
DATUM MSL	ELEVATION	DRILL RIG	CME 75 - ATV	DRILLING	
771.54' LS	CASING DEPTH	SAMPLE HAMMER TORQUE	140 FT-BLS	SURFACE CONDITIONS	
				Dry 15.0' from the easternmost bank of Sequoit Creek	
SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		SAMPLER & BIT	TEST RESULTS		
DEPTH IN FEET (ELEVATION)		CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT %	
ANGLE (ELEVATION)		BLOWS/FOOT ON CASING	LIQUID LIMIT *	LIQUID LIMIT *	
ANGLE		WATER LEVEL	PLASTIC	PLASTIC	
BEARING		TIME	SPECIFIC GRAVITY	SPECIFIC GRAVITY	
CASING DEPTH		DATE	OTHER TESTS	OTHER TESTS	
8.5- 10.0	2-2-3 (10)	CL	Clay, silty, medium gray, with peat, with rootlets grading into organic-rich silt with mica, dark brown and dusky yellow. SN - 10YR 22, Fm	11:50 AM	3:30 PM
10.0- 11.5	2-2-3 (12)	CLU MH	Clay, very silty with silt layers and a 1.0' thick fine grained sand lens. angular to subangular, dusky yellow and very dark gray. SY 6/4 - 2N, Fm	DATE	DATE
11.5- 13.0	2-2-4 (15)	CL	Clay, silty with 10% fine to coarse sand and < 2 gravel 2.0" in diameter, medium gray. SN, Dmm(1)	8 / 21 / 89	8 / 22 / 89
13.0- 14.5	2-2-3	CL	Clay, silty with 5% fine to coarse grained sand, moist, 5% subrounded gravel up to 0.5" in diameter, medium gray, dusky yellow. SN - SY 6/4, Dmm(1)		
14.5- 16.0	2-2-4	MH	Silt, clayey, dusky yellow and medium gray, very moist. SY 6/4 - SN, Dms		
16.0- 17.5	- 4-4	CL	Clay, silty with 10% fine to coarse sand and a 6" sandy-silt lens at 16.7', medium gray and dusky yellow. SN - SY 6/4, Dms		

SS000FAM CONFORMS WITH ESR-7.FIN

Modified from Weitz Management Inc.

PETERSON & ASSOCIATES INC. (BEI)

SOIL BOREHOLE LOG

SITE NAME AND LOCATION		SOIL BOREHOLE LOG									
HOD Landfill Antioch, Illinois		DRILLING METHOD Hollow-stem auger					BORING NO. LB-7 (B-3)				
Western boundary of landfill		SAMPLING METHOD Split spoon					SHEET 3 of 11				
DATUM	MSL	ANGLE	EL ELEVATION	DRILL RIG	CME 75 - ATV	SAMPLE HAMMER TORQUE	140 FT-BLS	WATER LEVEL	TIME	DATE	START
DEPTH IN FEET (ELEVATION)	BLows/ 6IN. ON SAMPLER (RECOVERY)	ANGLE	Vertical	BEARING				TIME	TIME	DATE	FINISH
25.0.	25.0	CL	As above.								
26.5.		CL	Clay, silty with 5% coarse sand and < 3% fine gravel, all subrounded, medium gray and olive gray. SN - 5Y 3/2, Dm								
23.5.		CL	Clay, silty, and silt, clayey, layered with 3" to 4" lenses, medium gray.								
22.0.	23.5.	3-3.5	CL								
20.5.		---	CL MH	Clay, silty with 10% fine to coarse, subangular to subrounded sand grains to 21.8'; 21.8' to 22.0' silty, clayey, medium gray. SN, Dm							
19.0.	20.5	2-4.5	CL MH	Clay, silty, and silt, clayey, medium gray and dusky yellow. 5Y 4/1 - 5Y 6/4, Dm							
17.5.	19.0	3-3.5	CL	Clay, silty, with 15% fine to coarse sand and a 2' sand lens, silty at 17.7', olive gray and dusky yellow. 5Y 4/1 - 5Y 6/4, Dm							

~~PROVISIONAL DRAFT~~
~~PROVISIONAL DRAFT~~
SUBJECT TO REVISION

LOGGED BY Wayne Townsend SI 30149

DATE 8/21/89

CHK'D BY

J. Powell, 1/16/90

DRILLING CONTR

Patrick Engineering

SOIL BOREHOLE LOG

SITE NAME AND LOCATION	DRILLING METHOD	Hollow-stem auger	BOREHOLE NO.	LB-7 (B-3)
HOD Landfill Antioch, Illinois	SAMPLING METHOD	Split spoon	SHEET	4 of 11
Western boundary of landfill	DRILLING		START	FINISH

WATER LEVEL		TIME	TIME
TIME		11:30 AM	3:30 PM
DATE		DATE	DATE

DATUM MSL ELEVATION 771.54' LS

CASING DEPTH

8/21/89

8/22/89

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	TEST RESULTS				
				SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT %
26.5 - 28.0	23-5	CL	Clay, silty, with 5% coarse sand with a 2.0' silt layer at 27.2', medium gray. SN, Dmm					
28.0 - 29.5		CL	Clay, very silty with 5% to 10% coarse sand, medium gray. SN, Dmm					
29.5 - 31.0	1-3-4	CL	Clay, very silty with 5% coarse rounded sand, medium gray. SN, Dmm					
31.0 - 32.5		CL	As above.					
32.5 - 34.0	3-4-6	CL	Clay, very silty with 10% coarse rounded sand and 5% fine subrounded gravel, medium gray. SN, Dmm					
34.0 - 35.5	8-10-	CL	Clay, very silty with coarse, subrounded to well rounded sand 5% gravel, medium gray. SN, Dmm					
35.5 - 36.0	11							

PRELIMINARY DRAFT SUBJECT TO REVISION

LOGGED BY

Wayne Townsend

SL 30150

DATE

21/89

CHK'D BY

W. J. Powell, 1/1

DRILLING CONTR

Patrick Engineering

SOIL BOREHOLE LOG											
SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill		DRILLING METHOD Hollow-stem auger									
		BORING NO. LB-7 (B-3)									
		SHEET 5 of 11									
		SAMPLING METHOD Split spoon									
		DRILLING									
		START	FINISH								
		WATER LEVEL									
		TIME									
		DATE									
		CASING DEPTH									
DATUM MSL ELEVATION 771.54' LS		TIME	TIME								
11:50 AM	3:30 PM										
DATE	DATE										
8/21/89	8/22/89										
DRILL RIG CME 75 - ATV		SURFACE CONDITIONS Dry 15.0' from the easternmost bank of Sequoit Creek									
ANGLE Vertical	BEARING										
SAMPLE HAMMER TORQUE 140 FT-BLS											
DEPTH IN FEET (ELEVATION)	BLOWS/6IN ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT%	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
35.5 - 37.0		CL	Clay, silty with 10% to 15% well rounded sand to 36.5'; 36.5' to 37.0' silt with very fine sand, medium gray. SN, Dmm								
37.0 - 38.5		MH	Silt, clean, moist, medium gray. SN, Dms(c)								
38.5 - 40.0	5-6-10	MH	Silt, with 15% very fine grained well rounded sand, moist, medium gray. SN, Dms(c)								
40.0 - 41.5	7-16- 24	MH	Silt and 30% very fine grained sand, clean, moist, medium gray. SN, Dms(c)								
41.5 - 43.0	6-10- 11	MH	As above.								
43.0 - 44.5	8-9-14	MH/ CL	To 43.3' as above; 43.3' to 44.5' clay, silty, medium gray. SN, Dms(c)								

RECORDED
SUBJECT TO REVIEW
BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

HOD Landfill
Antioch, Illinois

Western boundary of landfill

DRILLING METHOD Hollow-stem auger

BORING NO.
LB-7 (B-3)SHEET
6 of 11

SAMPLING METHOD Split spoon

DRILLING

START FINISH

WATER LEVEL

TIME TIME

TIME

11:50 AM 3:30 PM

DATE

DATE DATE

CASING DEPTH

8/21/89 8/22/89

DATUM MSL ELEVATION 771.54' LS

DRILL RIG CME 75 - ATV

SURFACE CONDITIONS Dry 15.0' from the easternmost

ANGLE Vertical BEARING

bank of Sequoit Creek

SAMPLE HAMMER TORQUE 140 FT-BLS

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
44.5 - 46.0	5-7-8	MH	Silt, clayey with 5% medium and coarse subrounded sand, medium gray. SN, Dms(c)							
46.0 - 47.5	15-19- 21	MH	Silt, clay, upper 0.4' very clayey with 10% medium to coarse grained sand, medium gray. SN, Dms(c)							
47.5 - 49.0	6-10- 11	MH	Silt, clayey with 15% subrounded coarse grained sand, medium gray. SN, Dms(c)							
49.0 - 50.5	6-8-11	MH	Silt, clayey with 10% fine to coarse subrounded sand and a trace of medium gravel, medium gray. SN, Dms(c)							
50.5 - 52.0	8-14- 17	MH	As above.							
52.0 - 53.5	7-6-8		No recovery.							

PRELIMINARY DRAFT
SUBJECT TO REVISION

SOIL BOREHOLE LOG

SOIL BOREHOLE LOG										
SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill				DRILLING METHOD Hollow-stem auger				BORING NO.		
								LB-7 (B-3)		
								SHEET		
								8 of 11		
								DRILLING		
								START	FINISH	
								TIME	TIME	
				11:50 AM	3:30 PM					
				DATE	DATE					
				8/21/89	8/22/89					
DATUM MSL ELEVATION 771.54' LS				CASING DEPTH						
DRILL RIG CME 75 - ATV				SURFACE CONDITIONS Dry 15.0' from the easternmost						
ANGLE Vertical		BEARING						bank of Sequoit Creek		
SAMPLE HAMMER TORQUE 140 FT-BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL				SAMPLER & BIT	CASING TYPE	TEST RESULTS	
			WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY			OTHER TESTS	

62.5 - 64.0	4-4-5		No recovery.	PRELIMINARY DRAFT SUBJECT TO REVISION							
64.0 - 65.5	2-3-4	CL	Clay, silty with < 5% fine sand to 65.2'; 65.2' to 65.5' silt, clayey, medium gray. SN, Dms								
65.5 - 67.0	4-4-5	MH	Silt, clayey with 5% fine to coarse subrounded sand, trace fine gravel, medium gray. SN, Dms								
67.0 - 68.5	3-5-8	CL	Clay, silty with trace of fine to coarse sand, trace of fine gravel, medium gray. SN, Dms								
68.5 - 70.0	6-9-12	CL	Clay, very silty, with 5% fine to coarse subrounded sand with trace of fine gravel, medium gray. SN, Dms								
70.0 - 71.5	3-5-43	CL SW	70.0' to 71.0' clay, silty with 10% fine to coarse sand; 71.0' to 71.5' sand and 30% gravel, medium to coarse, clayey, medium gray. Rubble zone or gravel has aroma and sheen of foreign material; PAH - aroma; HNU - 3 ppm. SN, Dms								

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill				DRILLING METHOD	Hollow-stem auger			BORING NO.	LB-7 (B-3)	
				SAMPLING METHOD	Split spoon			SHEET	9 of 11	
								DRILLING		
				WATER LEVEL				START	FINISH	
				TIME				TIME		
				DATE				DATE		
DATUM MSL ELEVATION 771.54' LS				CASING DEPTH				8/21/89	8/22/89	

DRILL RIG CME 75 - ATV			SURFACE CONDITIONS Dry 15.0' from the easternmost bank of Sequoit Creek							
ANGLE	Vertical	BEARING								
SAMPLE HAMMER TORQUE 140 FT-BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY

71.5 - 73.0	13-22- 17	CL	Clay, silty with 30% gravel, has aroma, medium gray. SN, Dms								
73.0 - 74.5	6-6-14	MH	Silt, 15% very fine to fine grained sand with thin < 0.1" clay layers. medium gray. SN, Dms								
74.5 - 76.0	37-22- 15	GW/ GC	Poor recovery, fractured, coarse gravel and silt, clayey, medium gray. SN, Dms								
76.0 - 77.5	16-23- 28	CL	Clay, with 10% coarse grained, subrounded sand with thin < 0.1" sand stringers, medium gray. SN, Dms								
77.5 - 79.0	8-16- 24	CL	Clay, stiff, clean, medium gray. SN, Dmm								
79.0 - 80.5	23-21- 29	CL	Clay, stiff with 20% coarse to very coarse grained subrounded sand, medium gray. SN, Dmm								

PRELIMINARY DRAFT
SUBJECT TO REVISION

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill				DRILLING METHOD Hollow-stem auger				BORING NO. LB-7 (B-3)	
								SHEET 10 of 11	
				SAMPLING METHOD Split spoon				DRILLING	
								START	FINISH
WATER LEVEL				TIME	TIME				
TIME				11:50 AM	3:30 PM				
DATE				DATE	DATE				
CASING DEPTH				8/21/89	8/22/89				
DATUM MSL ELEVATION	771.54' LS								

DRILL RIG CME 75 - ATV		SURFACE CONDITIONS Dry 15.0' from the easternmost									
ANGLE	Vertical	BEARING		bank of Sequoit Creek							
SAMPLE HAMMER TORQUE 140 FT-BLS											
DEPTH IN FEET (ELEVATION)	BLOWS/6IN ON SAMPLER	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL				SAMPLER & BIT	CASING TYPE	TEST RESULTS		
									WATER CONTENT %	Liquid Limit %	Plastic

80.5 - 82.0	---	CL	As above.									
82.0 - 83.5			Not sampled.									
83.5 - 85.0			Not sampled.									
85.0 - 86.5	5-7-8	CL	Clay, stiff with 20% coarse to very coarse subrounded sand, medium gray. SN, Dmm									
86.5 - 88.0	5-2-3	CL/ SM	88.0' to 87.0' as above; 87.0' - 89.0' sand, predominantly fine to medium grained, moderately well sorted, subangular to subrounded. Top of sand 87.0'.									
88.0 - 89.5			Not sampled because of flowing sand.									

~~CHART SUMMARY DRAFT~~
~~NOT SUBMITTED TO REVISION~~

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill			DRILLING METHOD Hollow-stem auger			BORING NO. LB-7 (B-3)	
						SHEET 11 of 11	
			SAMPLING METHOD Split spoon			DRILLING	
						START	FINISH
			WATER LEVEL			TIME	TIME
						11:50 AM	3:30 PM
			DATE			DATE	DATE
DATUM MSL ELEVATION 771.54' LS			CASING DEPTH			8/21/89	8/22/89

DRILL RIG CME 75 - ATV			SURFACE CONDITIONS Dry 15.0' from the easternmost							
ANGLE Vertical BEARING			bank of Sequoit Creek							
SAMPLE HAMMER TORQUE 140 FT-BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			

89.5- 91.0	--1-2	SM	Sand, as above to 89.5'; 91.0' sand, clayey, very fine to fine grained, medium gray. SN								
91.0- 94.5			Not sampled because of flowing sand.								
94.5- 96.0	7-15- 22	SM	Sand, silty, fine to medium grained, well sorted, subrounded to well rounded, brownish-gray.								
96.0- 99.5			Advanced borehole to 99.5'.								
99.5			Total depth.								

PRELIMINARY DRAFT
SUBJECT TO REVISION

Patrick Engineering

DRILLING CONTR

W. J. Powell, 1/16/90

CHK'D BY

DATE 8/22/89

Wayne Townsend

SL 30157

LOGGED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois On western property line ~ 660 feet from southwest corner of landfill			DRILLING METHOD Hollow-stem auger			BORING NO. LB-8 (B-7)	
						SHEET 1 of 4	
			SAMPLING METHOD 24° split spoon, 18° samples			DRILLING	
						START	FINISH
			WATER LEVEL			TIME	TIME
			TIME			7:45	1:30
			DATE			DATE	DATE
DATUM	MSL	ELEVATION	772.53 LS	CASING DEPTH		9/1/89	9/1/89

DRILL RIG CME 55 ATV	SURFACE CONDITIONS Edge of fill beside Sequoit Creek.
ANGLE vertical	BEARING
SAMPLE HAMMER TORQUE 140 FT-BLS	

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
1.0 - 2.5	4, 3, 4 (1.5)		Clay: (fill) Moderate brown (5YR 3/4), stiff, with peat, black, organic at base.								
2.5 - 4.0	3, 4, 4 (1.5)		Clay: (fill) Moderate brown (5YR 3/4) to yellowish-gray (5Y 8/1), 10% fine gravel, stiff.								
4.0 - 5.5	2, 4, 3 (1.5)		Clay: As above, mottled.								
5.5 - 7.0	(.8)	CL	Upper .2' - Clay - yellowish-gray (5Y 8/1), stiff. Lower .8' - clay - yellowish-gray with fine grained subrounded sand (15%).								
7.0 - 8.5	2, 2, 3 (1.5)	CL	Clay: Dark gray (N3), plastic, organic rich with plant debris, Fsc.								
8.5 - 10.0	2, 2, 3 (1.5)	CL PT	Clay: Dark gray (N3) to black (N1), plastic organic rich with peat - black, Fsc.								

**PRELIMINARY DRAFT
SUBJECT TO REVISION**

W.J. Powell (1/1690) DRILLING CONTR

C

DATE 9/1/89

LOGGED BY Neil Moss

SL30158

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois On western property line ~ 660 feet from southwest corner of landfill				DRILLING METHOD Hollow-stem auger				BORING NO. LB-8 (B-7)	
								SHEET 2 of 4	
SAMPLING METHOD 24" split spoon, 18" samples								DRILLING	
								START	FINISH
WATER LEVEL								TIME	TIME
TIME								7:45	1:30
DATE								DATE	DATE
CASING DEPTH								9/1/89	9/1/89

DATUM MSL	ELEVATION	772.53 LS	SURFACE CONDITIONS	Edge of fill beside Sequoit Creek.
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ANGLE	vertical	BEARING						
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SAMPLE HAMMER TORQUE	140 FT-BLS						
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DEPTH IN FEET (ELEVATION)	BLOWS/ IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER& BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
10.0 - 11.5	2, 5, 4 (.8)	CL	Upper .3' - Clay - as above. Lower .5' - clay - moderate brown (SYR 4/4) to dark yellowish-orange (10YR 6/6) with 20% fine gravel and 10% fine to coarse grained sand, Dms.							

11.5 - 13.0	3, 4, 5 (1.5)	CL	Clay: Moderate brown (SY 4/4), stiff, with 10% fine gravel; sand scam 2' from base - sand - fine to coarse grained, subrounded to subangular, Dms.							
13.0 - 14.5	3, 2, 4 (1)	CL	Upper 25' - Clay - as above. .25' - Clay with sand and gravel moderate brown (SYR 4/4), fine gravel and coarse sand. .5' - Clay - medium gray (NS), stiff, silty, Dms.							
14.5 - 16.0	3, 4, 4 (1.2)	CL	Clay: Silty, medium gray (NS) to medium dark gray (N4), stiff, trace coarse sand to very fine gravel, Dmm.							
16.0 - 17.5	2, 4, 4 (1.1)	CL	Clay: Very silty, medium gray (NS) to medium dark gray (N4), stiff, trace coarse sand and fine to medium gravel, Dmm.							
17.5 - 19.0	2, 4, 5 (1.5)	CL	Clay: As above.							

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois On western property line ~ 660 feet from southwest corner of landfill		DRILLING METHOD Hollow-stem auger				BORING NO. LB-8 (B-7)	
						SHEET 3 of 4	
		SAMPLING METHOD 24" split spoon, 18" samples				DRILLING	
						START	FINISH
		WATER LEVEL				TIME	TIME
		TIME				7:45	1:30
		DATE				DATE	DATE
		CASING DEPTH				9/1/89	9/1/89
DATUM MSL	ELEVATION 772.53 LS						

DRILL RIG CME 55 ATV	SURFACE CONDITIONS Edge of fill beside Sequoit Creek.
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ANGLE vertical	BEARING
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SAMPLE HAMMER TORQUE 140 FT-BLS	
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DEPTH IN FEET (ELEVATION)	BLOWS /IN ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS			
					BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY

19.0 - 20.5	2,4,4 (1.5)		Clay: As above.						
20.5 - 22.0	(1.5)		Clay: Same as 16.0 - 17.5.						
22.0 - 23.5	5,5,4 (1.5)	CL ML	Upper .5' - Clay, as above, .3' - Silt, very fine grained sand, medium gray (N5). .6' - Clay, silty, medium dark gray (N4), trace coarse sand and gravel, Dmm.						
23.5 - 25.0	4,5,5 (1.5)	CL	Clay: Silty, medium dark gray (N4), trace coarse sand and fine gravel, Dmm.						
25.0 - 26.5			Clay: As above, very silty at base, Dmm.						
26.5 - 28.0	3,4,6		No Recovery.						
28.0 - 30.0	3,4,5,		No Recovery. Total Depth at 30'.						

**PRELIMINARY DRAFT
SUBJECT TO REVISION**

DRILLING CONTR
W.J.Powell (1/16/90)

DATE

SL30160

NeilMoss

LOGGED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois				DRILLING METHOD				BORING NO. US-4D					
Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois				SAMPLING METHOD				SHEET 1 of 2					
				Samples collected by Ecology and Environment									
DATUM MSL ELEVATION 770.68 LS				DRILLING				START	FINISH				
				WATER LEVEL				TIME	TIME				
TIME								DATE	DATE				
DATE													
CASING DEPTH													
DRILL RIG				SURFACE CONDITIONS									
ANGLE		BEARING											
SAMPLE HAMMER TORQUE													
DEPTH IN FEET (ELEVATION)	BLOWS 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
			WATER CONTENT %	LIQUID LIMIT %	PLASTIC				SPECIFIC GRAVITY	OTHER TESTS			
7.5 - 9.0	2A	SP	2A Sand (70%): Fine to coarse grained, subrounded to subangular, non-calcareous, moderately sorted, subangular, shale clasts, subrounded dolomite clasts to 3/8", SYR 4/1 (D), SY 4/1 (W). 2B Clay: Brownish-black; organic, some medium sand and fine gravel.										
Continued	2B	OH	Gravel (40%): Fine, subrounded, dolomite pebbles, slightly calcareous. 15% silt; organic 45% sand: very fine to coarse grained, non-calcareous, subrounded to subangular, very poorly sorted.										
12.5 - 14.0	2C	GM/ SW	Gravel (40%): Fine, subrounded, dolomite pebbles, slightly calcareous. 15% silt; organic 45% sand: very fine to coarse grained, non-calcareous, subrounded to subangular, very poorly sorted.										
17.5 - 19.0		SW	Sand (90%): Poorly sorted, very fine to very coarse grained, subrounded to subangular. Gravel (5%): Small, subrounded, dolomite shale pebbles. 5% Silt: Slightly organic, clayey, SYR 4/1 D/W.										
22.5 - 24.0		SW	Sand (85%): Very fine to very coarse grained, subrounded, very poorly sorted. 5% Silt, 10% Gravel: Small, subrounded dolomite shale some 1" clasts. SY 6/1 (D) SY 4/1 (W).										
27.5 - 29.0		GW	Gravel (60%): Dolomite quartzite to 1/2", subrounded to subangular. Sand (40%): Very fine to very coarse grained, subrounded to subangular, some silt, poorly sorted.										
		CL	Clay (50%): Massive. Silt (48%): Trace fine sand and fine gravel, SY 6/1 (D), SY 4/1 (W).										

DRILLING CONTR

W. J. Powell 1/16/90

DATE 7/20/89

CHK'D BY Jav.S. Johnston SL 30260

LOGGED BY Jav.S. Johnston

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois			DRILLING METHOD	BORING NO. US-4D	
Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois			SAMPLING METHOD	SHEET 2 of 2	
			Samples collected by Ecology and Environment	DRILLING	
				START	FINISH
			WATER LEVEL	TIME	TIME
			TIME		
			DATE	DATE	DATE
CASING DEPTH					
DATUM MSL ELEVATION 770.68 LS					

DRILL RIG			SURFACE CONDITIONS				
ANGLE	BEARING						
SAMPLE HAMMER TORQUE							
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS

32.5 - 34.0	A B	CL SW	A. Clay: As above. B. Sand (60%): Very fine to very coarse grained, subangular, very poorly sorted. Gravel (20%): Fine grained, subrounded, shale and dolomite pebbles. Silt (15%). Clay (5%). 5Y 6/1 (D). 5Y 4/1 (W).				
60.0 - 61.5		CL	Clay (50%): Soft, plastic, massive, silty (45%), trace fine sand and fine grained gravel, 5YR 6/1 (D), 5 YR 4/1 (W).				
70.0 - 71.5	A B	ML SP	A. Silt (90%): Massive with 10% clay, 10YR 6/2 (W). Sand: Very fine grained, well sorted, 10YR 8/2 (D).				
75.0 - 76.5		CL	Clay (60%): Massive. Silt (40%): Silt rich layers (2mm) - irregular, convolute (deformation structures).				
80.0 - 81.5		SP	Sand: Very fine to fine grained, well sorted. Silty clay rich zones. Top of Haeger Member of Wedron Formation.				
90.0 - 91.5			Sand. Haeger Member.				

Preliminary Draft
Subject to Revision

DRILLING CONTR

W. J. Powell 11/16/89

CHKD BY

DATE 7/20/89

SL 30261

LOGGED BY Jay S. Johnston

LOGGED BY Jay S. Johnston

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 4 1/4" ID HSA				BORING NO. W3SA							
				SAMPLING METHOD: 2" OD SPLIT SPOON											
								SHEET 1 OF 1							
								DRILLING							
				START		FINISH									
				TIME		TIME									
BORING LOCATION: NE 1/4 of NE 1/4 of Section 17, T 46 N, R 10 E/W				DATE		DATE									
NORTHING 2115185.3 EASTING 1051029.2				CASING DEPTH		4/6/93		4/6/93							
DATUM ELEVATION 763.8															
DRILL RIG CME 750 ATV				SURFACE CONDITIONS MARSH/WETLAND, SURFACE WATER											
ANGLE Vertical BEARING -----															
SAMPLE HAMMER TORQUE FT-LBS															
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
											WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OTHER TESTS
5	6311	67		1 Frozen Black Muck - Peaty, Vegetation Debris (PT)				SS							-
	WT	75		2 Greenish Light Gray Soft Clay (OH) Silt Lenses Vegetation Debris, Gastropod Shells and Other Shell Material Present, Spongy Peat Like				SS							-
5	5411	83		3				SS							-
	55	46		4 Very Loose Light Gray Fine SAND to Silty Sand (SP/SM), Some Medium, Trace Coarse Sand Little to Some Silt				SS							-
5	5544	83		5 Greenish Soft Clay (CH) Trace Silt, Gastropod Shells Present				SS							-
	2346	66		6 Very Loose Gray Fine to Coarse SAND and Fine GRAVEL (SP/GP), Grades to Coarse to Fine to Coarse				SS							-
10	2245	92		7 Medium SAND (SP) to 13.5 Feet Grades to Medium to Coarse Sand				SS							-
	57913	75		8 Trace Fine Gravel				SS							-
15				End of Boring at 16 Feet Monitoring Well Set at 15.64' PID = None Detected											
20															
25															
30															
35															
LOGGED BY <u>SJC</u>				DRILLING CONTR <u>E & F</u>											
DATE <u>9/22/93</u>				CHK'D BY <u>DAP</u>				<u>CHAS. MARKGRAF</u>							
												ID: WM1			

SOIL BOREHOLE LOG

SITE NAME AND LOCATION		H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 4 1/4 ID HSA				BORING NO. W3SB				
						SAMPLING METHOD: 2" OD SPLIT SPOON				SHEET 1 OF 1				
										DRILLING				
										START	FINISH			
BORING LOCATION:						WATER LEVEL				TIME	TIME			
NE 1/4 of NE 1/4 of Section 17 , T 46 N, R 10 E/W						TIME				DATE	DATE			
NORTHING 2115189.4		EASTING 1051027.8				DATE				4/7/93	4/7/93			
DATUM		ELEVATION 763.7				CASING DEPTH								
DRILL RIG CME 750 ATV						SURFACE CONDITIONS		MARSH/WETLAND, SURFACE WATER						
ANGLE Vertical		BEARING -----												
SAMPLE HAMMER TORQUE		FT-LBS												
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
				WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY				OTHER TESTS			
5				Blind Drill to 16 Feet See Boring Log W3SA for Geologic Description to 16 Feet										
10														
15														
747.7	WT/12"	100		1 Loose Gray Fine to Coarse SAND (SP), Trace Silt, Grades to Fine to Medium Sand to 19 Feet Then Fine to Coarse				SS						
	2 3 5 6	100		2				SS						-
	2 3 5 5	63		3 Loose Gray-Brown Fine to Coarse SAND (SP) Little Fine Gravel, and Silt, Trace Clay				SS						-
	6 8 7 7	42		4				SS						-
	6 11 13 11	58		5				SS						-
	6 9 7 6	42		6 Medium Dense Fine to Coarse SAND (SP), Trace to Little Fine Gravel and Silt 3" Gray Silty CLAY Layer at 26'				SS						-
	6 9 7 6	71		7				SS						-
734.2	3 4 6 6	67		8 Very Stiff Gray Silty CLAY (CL), Trace Medium to Coarse Sand, Trace to Little Fine Sand, Grades to Clayey Silty CLAY (CL/ML), Shale Fragments Present				SS						2.0- 2.75
731.7				End of Boring at 32 Feet Monitoring Well Set at 29.5 Feet PID = None Detected										
35														

LOGGED BY SJC
 DATE 9/22/93 CHK'D BY DAP

DRILLING CONTR E & F
CHAS. MARKGRAF ID: WM1

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

DRILLING METHOD: 6" RB WITH MUD

BORING NO.
W3D

SAMPLING METHOD: 2" SPLIT SPOON, SHELBY

SHEET
1 OF 2

TUBE (34.5 - 38 FT)

DRILLING

BORING LOCATION:

NE 1/4 of NE 1/4 of Section 17 , T 46 N, R 10 E/W
NORTHING 2115187.6 EASTING 1051022.7
DATUM ELEVATION 763.7

WATER LEVEL					TIME	TIME
TIME					DATE	DATE
DATE					4/8/93	5/25/93
CASING DEPTH						

DRILL RIG CME750 ATV/Track Rig

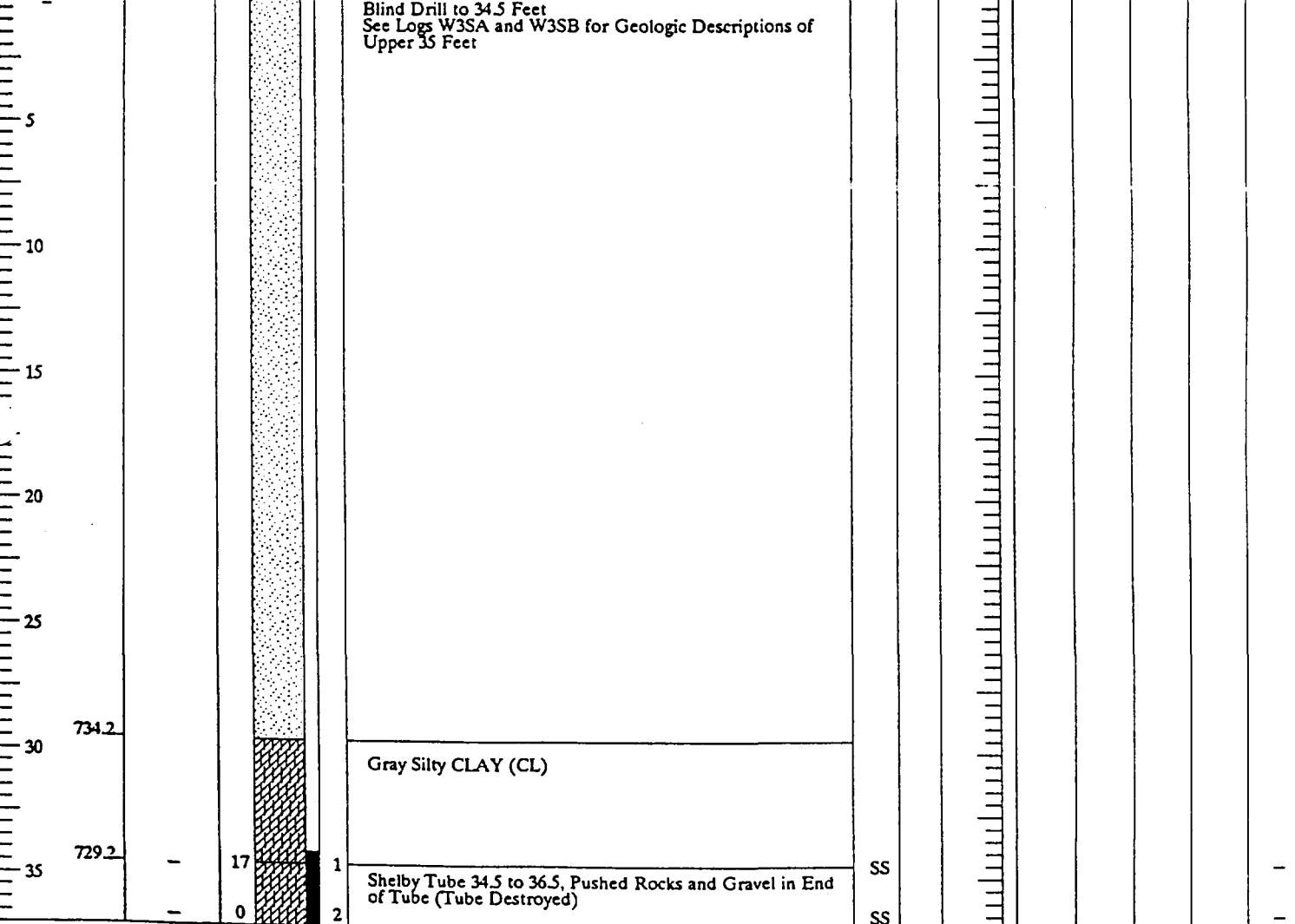
SURFACE CONDITIONS MARSH/WETLAND WET

ANGLE Vertical BEARING -----

SAMPLE HAMMER TORQUE FT-LBS

DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS	SAMPLER AND BIT	CASING TYPE	TEST RESULTS				
							WATER CONTENT %	Liquid Limit %	Plastic Limit %	Specific Gravity	Other Tests

Blind Drill to 34.5 Feet
See Logs W3SA and W3SB for Geologic Descriptions of
Upper 35 Feet



LOGGED BY SJC

DRILLING CONTR E & F, ETI

DATE 9/22/93 CHK'D BY DAP

CM/JR

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois ~ 100' north of LB-2		DRILLING METHOD Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit	BORING NO. PZ-2
		SAMPLING METHOD 24" split spoon, 18" samples	SHEET 1 of 10
		Samples collected by Patrick Engineering.	
		WATER LEVEL	START FINISH
		TIME	TIME 8:30
		DATE	DATE 8/16/89 8/16/89
DATUM MSL	ELEVATION 763.26' LS	CASING DEPTH	

DRILL RIG CME 75 ATV	SURFACE CONDITIONS Peat marsh; riser casing stick up 3.8'
ANGLE Vertical	BEARING
SAMPLE HAMMER TORQUE 140 FT-BLS	

DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	Liquid Limit %	Plastic	Specific Gravity	Other Tests
0											

0											
1.0 - 2.5	2-1-2 (18")	PD CL	6" peat. 12" clay, blackish-gray, silty, trace coarse grained sand, organics, laminated, SGY 6/1. Fm								
2.5 - 4.0	3-4-6 (18")	CL	Clay, blackish-gray, silty, as above, increase in sand to bottom, coarse to very coarse grained. Fm								
4.0 - 5.5	3-4-6 (12")	SC	6" clay, black, silty, as above, with organics, peat, wood chips. 6" sand and gravel, olive brown, very clayey; sand is coarse to very coarse grained, very poorly sorted; gravel to 1/8", SY 5/6; clay (30%). Dcm(r)								
5.5 - 7.0	3-4-7 (8")	SM-GM	2" clay, blackish-gray, organic-rich, silty, grading down to 3" clay-silt-organic interbeds, very clayey, organic-rich. 2" sand and gravel, very clayey, silty; sand is medium to very coarse grained; gravel to 1/2". Fm								
7.0 - 8.5			No recovery.								

Patrick Drilling

DRILLING CONTR

W.J. Powell, 1/16/90

CHK'D BY

DATE 8/16/17/89

J. Johnson/W. Townsend

SL 30212

LOGGED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois ~ 100' north of LB-2		DRILLING METHOD Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit	BORING NO. PZ-2
		SAMPLING METHOD 24" split spoon, 18" samples Samples collected by Patrick Engineering.	SHEET 2 of 10
			DRILLING
			START FINISH
		WATER LEVEL	TIME
		TIME	8:30
		DATE	DATE
DATUM MSL ELEVATION 763.26' LS		CASING DEPTH	8/16/89 8/16/89

DRILL RIG CME 75 ATV		SURFACE CONDITIONS Peat marsh; riser casing stick up 3.8'								
ANGLE	Vertical	BEARING								
SAMPLE HAMMER TORQUE 140 FT-BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			

8.5 - 10.0	3-4-7 (10")	GM	Gravel (40%), very silty, sandy, clayey, to 2"; sand (20%), fine to coarse grained, subrounded; silt (20%); clay (20%), 5Y 6/1. Dcm(r)					WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
10.0 - 11.5	(15")	GM SP SW SP	3" sand and gravel, very silty, clayey, as above. 9" sand, fining upward, fine to medium grained, well sorted; silt (10%), grading down to sand, fine to very coarse grained, moderately sorted, with 1/8" gravel, subangular. 3" sand, fine to medium grained, well sorted, with gravel (5%) to 1/2". Sg									
11.5 - 13.0	--18-24 (9")	SC	Sand (40%), very poorly sorted, clayey; gravelly, fine to medium grained, subrounded to rounded; gravel (30%), subrounded shale-dolomite; clay (20%); silt (10%). Clay balls and 1/2" irregular clayey interbeds. Dcs									
13.0 - 14.5	8-7-7 (9")	SM ---- SP	(A) 9" sand, poorly sorted, medium to coarse grained, with silt and clay, coarsening down to sand and gravel, very poorly sorted, clayey, to 2". (B) laminated, silty, sandy, clayey, layers 1/2", with 1" gravel; clay balls. (C) sand (80%), poorly to moderately sorted, subangular to subrounded, with 1" gravel. Sg - Fl									
14.5 - 16.0			No recovery.									
16.0 - 17.5	--9-10 (18")	CL	Clay, massive, silty, trace coarse grained sand, calcareous, 5Y 6/1. Dmm(r)									

THIS IS A DRAFT
SUBJECT TO REVISION

LOGGED BY J. Johnston/W. Townsend SL 30213 DATE 8/16/17/89

PATRICK DRILLING W. J. POWELL, P.E. DRILLING CONTR

RE-LAMOREAU & ASSOCIATES INC. (PEL)

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois ~ 100' north of LB-2		DRILLING METHOD Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit	BORING NO. PZ-2	
		SAMPLING METHOD 24" split spoon, 18" samples Samples collected by Patrick Engineering.	SHEET 3 of 10	
			DRILLING	
		WATER LEVEL	START	FINISH
		TIME	TIME	
		DATE	DATE	DATE
DATUM MSL ELEVATION 763.26' LS		CASING DEPTH	8/16/89	8/16/89

DRILL RIG CME 75 ATV		SURFACE CONDITIONS Peat marsh; riser casing stuck up 3.8'		
ANGLE Vertical	BEARING			
SAMPLE HAMMER TORQUE 140 FT-BLS				

DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS		
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC
17.5 - 19.0	3-4-6 (18")	CL	Clay, massive, silty, as above. Dmm(s)						

DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			CHK'D BY	DATE	LOGGED BY	W. J. Powell 1/16/90	DRILLING CONTR
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC					
17.5 - 19.0	3-4-6 (18")	CL	Clay, massive, silty, as above. Dmm(s)											
19.0 - 20.5	7-4-11 ---- (18")	SP CL	(A) 3" sand (40%), very poorly sorted, and gravel (10%) to 1/4", organic, clay-rich zones. F (B) 15" clay, massive, silty, as above. Dmm(r) A-B abrupt contact.											
20.5 - 22.0	2-2-5 (8")	SW/ SP	Sand, fine grained, grading to coarse sand to very coarse sand and, at base of spoon, 10% fine gravel, with a trace of silt. Sg											
22.5 - 24.0	3-7-10 (18")		(A) sand, poorly sorted, fine to very coarse grained, with a trace of silt and gravel up to 1/8" in diameter. (B) as above, with gravel up to 1" in diameter. Sg											
24.0 - 25.5	9-9-7 (18")		(A) sand, coarse to very coarse grained, with 5% gravel up to 1/8" in diameter. Sm (B) Gravel and cobbles 2"+ in diameter, with sand, as above. Gm (C) clay, silty, massive, medium gray. Dm											
25.5 - 27.0	5-6-7		No recovery.											

SUBJECT TO REVISION

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

HOD Landfill
Antioch, Illinois

~ 100' north of LB-2

DRILLING METHOD Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit

 BORING NO.
PZ-2

 SHEET
4 of 10

SAMPLING METHOD 24" split spoon, 18" samples

DRILLING

Samples collected by Patrick Engineering.

Patrick Drilling

DATUM MSL **ELEVATION** 763.26' LS **DRILL RIG** CME 75 ATV **SURFACE CONDITIONS** Peat marsh; riser casing stick up 3.8'

ANGLE Vertical **BEARING**

SAMPLE HAMMER TORQUE 140 FT-BLS

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	TEST RESULTS		
					CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT %
27.0.	3-5-7		27.0 to 27.2' - gravel (50%), clayey, sandy. Gm (187)				
28.5.	4-6-7		28.5 to 29.0' - clay, sandy, medium gray. N5, Dmm 29.0 to 30.0' - clay, silty, massive, medium gray. N5, Omm (187)				
30.0.	5-5-9		Augers advanced and seated to 29.0' BLS, sealed with Hole Plug Bentonite to seal off upper sand. Clay, silty, medium gray. NS, Dmm (187)				
31.5.	5-5-9		Clay, silty, medium gray. NS, Dmm (187)				
33.0.	33.0		Clay, silty, medium gray. NS, Dmm Clay, very silty, with some coarse to fine sand and a 2" silt seam at 35.2', medium gray. NS, Dms(c) Clay, very silty, with some coarse to fine sand, medium gray. NS, Dmm Clay, very silty, with some coarse to fine sand and a 2" silt seam at 35.2', medium gray. NS, Dms(c)				
34.5.	34.5						
36.0							

PRELIMINARY DRAFT SUBJECT TO REVISION

LOGGED BY J. Johnson/W.Townsend SL 30215 DATE 8/16-17/89 CHK'D BY W. J. Powell, 1/16/90 DRILLING CONTR

SOIL BOREHOLE LOG										
SITE NAME AND LOCATION HOD Landfill Antioch, Illinois ~ 100' north of LB-2 DATUM MSL ELEVATION 763.26' LS			DRILLING METHOD Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit					BORING NO. PZ-2		
			SAMPLING METHOD 24" split spoon, 18" samples Samples collected by Patrick Engineering.							
								DRILLING		
			WATER LEVEL					START	FINISH	
			TIME					TIME	TIME	
			DATE					DATE	DATE	
			CASING DEPTH					8/16/89	8/16/89	
			DRILL RIG CME 75 ATV				SURFACE CONDITIONS Peat marsh; riser casing stick up 3.8'			
ANGLE Vertical		BEARING								
SAMPLE HAMMER TORQUE 140 FT-BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	TEST RESULTS		
								WATER CONTENT%	LIQUID LIMIT %	PLASTIC
36.0 - 37.5			Clay, very silty, with a 0.5" silt layer at 36.7", medium gray. NS, Dms(c)							
37.5 - 39.0			Clay, massive, silty, with a 2"+ coarse gravel in tip of spoon, medium gray. NS, Dms(c)							
39.0 - 40.5			Clay, silty, to 39.7". 39.7" to 40.5" - clay, with 20% fine to coarse sand, medium gray. NS, Dms(c)							
40.5 - 42.0			Clay, with 15% coarse to medium grained, angular to subangular sand and fine gravel up to 0.25" in diameter, medium gray. NS, Dms(c)							
42.0 - 43.5			Clay, very silty, silt content may equal clay content; silt is clayey from 43.0' to 43.2', medium gray. NS, Dms(c)							
43.5 - 45.0			Clay, silty to very silty, with a 0.25" fine sand layer at 44.6", medium gray. NS, Dms(c)							

Patrick Drilling

DRILLING CONTR

W. J. Powell, 1/16/90

CHK'D BY

J. Johnson/W. Townsend SL 30216

LOGGED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois ~ 100' north of LB-2	DRILLING METHOD	Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit	BORING NO.
			PZ-2
	SHEET	6 of 10	
	SAMPLING METHOD	24" split spoon, 18" samples	
	Samples collected by Patrick Engineering.		DRILLING
	START	FINISH	
	WATER LEVEL		
	TIME		
	DATE		
	CASING DEPTH		
DATUM MSL ELEVATION 763.26' LS	8:30	DATE	DATE
	8/16/89	8/16/89	

Panic Drilling

DEBILING CONTR

CHK'D BY W. J. Powell, 1/16/90

Johnson, W. Townsend & 1 30217

ACCENDAV

DRILL RIG CME 75 ATV			SURFACE CONDITIONS Peat marsh; riser casing stick up 3.8'					
ANGLE Vertical		BEARING						
SAMPLE HAMMER TORQUE 140 FT-BLS								
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS	
WATER CONTENT %	Liquid Limit %	Plastic	Specific Gravity	Other Tests				
45.0 - 46.5			Silt, clayey to 45.4'. 45.4' to 46.0' - clay, silty, medium gray. NS, Dms(c)					
46.5 - 48.0			46.5' to 47.0' - silt, clayey. 47.0' to 47.5' - clay, silty, with 2"+ sheared limestone gravel, medium gray. NS, Dms(c)					
48.0 - 49.5			Clay, very silty, with silt lenses <0.25" thick, medium gray. NS, Dms(c)					
49.5 - 51.0			Clay, massive, very low silt content, medium gray. NS, Dms(c)					
51.0 - 52.5			Clay, as above to 51.5'. 51.5' to 52.5' - silt, clayey, clean, medium gray. NS, Dms(c)					
52.5 - 54.0			Silt, as above to 52.7'. 52.7' to 54.0' - clay, massive, trace of silt, medium gray. NS, Dmm					

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois ~ 100' north of LB-2				DRILLING METHOD Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit				BORING NO. PZ-2		
				SAMPLING METHOD 24" split spoon, 18" samples Samples collected by Patrick Engineering.						
								DRILLING		
								START	FINISH	
				WATER LEVEL					TIME	TIME
				TIME					8:30	
				DATE					DATE	DATE
				CASING DEPTH					8/16/89	8/16/89
DATUM MSL	ELEVATION 763.26' LS									

DRILL RIG CME 75 ATV	SURFACE CONDITIONS Peat marsh; riser casing stick up 3.8'				
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ANGLE Vertical	BEARING					
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SAMPLE HAMMER TORQUE 140 FT-BLS						
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DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT%	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
54.0 - 55.5	6-8-10 (18")		Clay, sandy, with fine to coarse grained, subangular to subrounded sand, medium gray and dark gray. N5, N3, Dmm							
55.5 - 57.0			As above.							
57.0 - 58.5			Clay, silty, with <5% medium gravel, trace of sand, medium dark gray. N4, Dmm							
58.5 - 60.0			Clay, silty, clean, massive, no sand or gravel, dark gray. N3, Dmm							
60.0 - 61.5	4-6-7 (18")		Clay, silty, medium dark gray. N4, Dmm							
61.5 - 63.0	5-7-8 (18")		Clay, as above.							

**PRELIMINARY DRAFT
SUBJECT TO REVISION**

LOGGED BY	J. Johnston/W. Townsend	SL 30218	DATE	8/16/17/89	CHK'D BY	W. J. Powell, 1/16/90	DRILLING CONTR	Patrick Drilling
S5000.FRM C:\FORMS\141SBL\PZ-2.FIL	Modified from Waste Management, Inc.							

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois ~ 100' north of LB-2		DRILLING METHOD Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit	BORING NO. PZ-2
		SAMPLING METHOD 24" split spoon, 18" samples Samples collected by Patrick Engineering.	SHEET 9 of 10
		DRILLING	
DATUM MSL	ELEVATION 763.26' LS	START	FINISH
		TIME	TIME
		8:30	
		DATE	DATE
		8/16/89	8/16/89

DRILL RIG CME 75 ATV	SURFACE CONDITIONS Peat marsh; riser casing stick up 3.8'
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ANGLE Vertical	BEARING
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SAMPLE HAMMER TORQUE 140 FT-BLS	
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DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY

72.0 - 73.5	8-15-15 (18")		Clay, silty, with some sand, fine to very coarse grained, stiff, medium gray. N4							
73.5 - 75.0	27-31- 26 (12")		73.5' to 74.1' - clay, as above. 74.1' to 74.2' - silt, medium dark gray. N4 74.2' to 74.9' - sand, very fine to very coarse grained, angular to subrounded, silty, with some gravel, sharp silt/sand contact.							
75.0 - 76.5	5-12-16 (12")		Sand, predominantly medium to coarse grained, some fine grained, subangular to subrounded, with some fine gravel decreasing toward base, medium gray to light brownish-gray. NS - SYR 6/1							
76.5 - 78.0	13-26- 40 (14")		Sand, medium to coarse grained, some fine grained, moderately well sorted to well sorted, subrounded to rounded, trace of gravel, medium gray to light brownish-gray. NS - SYR 6/1 NOTE: An oily film formed on the surface of the mud pit when this horizon was penetrated (HNU 5 PPM).							
78.0 - 79.5	28-21- 14 (10")		Sand and gravel, fine to coarse grained sand, fine gravel, poorly sorted, silty, medium gray. NS							
79.5 - 81.0	9-16-11 (10")		Sand and gravel with silt, poorly sorted, sand is very fine to very coarse grained, angular to subrounded, gravel up to medium grained, medium gray to light brownish-gray. NS - SYR 6/1							

PRELIMINARY
SUBJECT TO REVIEW
DRAFT

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois ~ 100' north of LB-2		DRILLING METHOD Hollow-stem auger (4-1/4")/ rotary, fresh water mud, 3-7/8" diameter bit	BORING NO. PZ-2	
		SAMPLING METHOD 24" split spoon, 18" samples	SHEET 10 of 10	
Samples collected by Patrick Engineering.		DRILLING		
		WATER LEVEL	START	FINISH
		TIME	TIME	
		DATE	DATE	
DATUM MSL ELEVATION	763.26' LS	CASING DEPTH	8/16/89	8/16/89

DRILL RIG CME 75 ATV	SURFACE CONDITIONS Peat marsh; riser casing stick up 3.8'
ANGLE Vertical	BEARING
SAMPLE HAMMER TORQUE 140 FT-BLS	

DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
81.0 - 83.0	13-25- 21-20 (18")		Sand, very fine to very coarse grained, angular to subrounded, with fine gravel, angular to subrounded, some silt, moderately to poorly sorted, light brownish-gray. 5YR 6/1							
85.0			Borehole advanced to 85.0'. Total depth.							

PRELIMINARY DRAFT
SUBJECT TO REVISION

Patrick Drilling

0 DRILLING CONTR

W.J. Powell

CHK'D BY 8/16/17/89

J. Johnson W. Townsend SL 30221

LOGGED BY J. Johnson W. Townsend SL 30221

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois			DRILLING METHOD					BORING NO.	
								US-2D	
								SHEET	
								1 of 2	
DATUM MSL ELEVATION 768.57 *			SAMPLING METHOD					DRILLING	
			Samples collected by Ecology and Environment					START	FINISH
			WATER LEVEL					TIME	TIME
			TIME						
DATE					DATE	DATE			
CASING DEPTH									

DRILL RIG			SURFACE CONDITIONS						
ANGLE	BEARING		* Top of concrete pad						
SAMPLE HAMMER TORQUE									
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS		
							WATER CONTENT%	LIQUID LIMIT %	PLASTIC

7.5 - 9.0			A-C - See EPA descriptions.						
11.5 - 13.0		CL	Clay (45%), Silt (55%): Massive, slightly oxidized, trace sand, calcareous, 10YR 5/4 (dry) 10YR 4/2 (wet).						
16.5 - 18.0		CL	Clay (45%), Silt (55%): Massive, dense, calcareous, trace sand, 10YR 6/2 (dry) 10YR 4/2 (wet).						
55.0 - 56.5		CL	Clay (45%), Silt (55%): Massive, dense, calcareous, 10YR 5/2.						
60.0 - 61.5		CL	Clay: Silty, as above, trace 1/2" dolomite gravel, oriented 45 degrees. Clay: As above, no gravel.						
70.0 - 71.5		CL	Clay: Silty, massive, dense, no gravel.						

PRELIMINARY DRAFT
SUBJECT TO REVISION

LOGGED BY Jay S. Johnston DATE 7/21/89 CHKD BY W. J. Powell (11690) DRILLING CONTR

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois		DRILLING METHOD		BORING NO. US-2D	
				SHEET 2 of 2	
Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois		SAMPLING METHOD Samples collected by Ecology and Environment		DRILLING	
				START	FINISH
WATER LEVEL				TIME	TIME
TIME					
DATE				DATE	DATE
DATUM MSL ELEVATION 768.57 *		CASING DEPTH			

DRILL RIG		SURFACE CONDITIONS			
ANGLE	BEARING	* Top of concrete pad			
SAMPLE HAMMER TORQUE					

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS				
						BLOWSFoot ON CASING	WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
80.0 - 81.5	CL		Clay (80%), Silt (20%): Medium gray, soft, plastic, cohesive, moist, massive, 5N.							
85.0 - 86.5	ML		Silt (80%), Clay (20%): Medium light gray, calcareous, medium gray, (wet) 6N - 5N.							
90.0 - 91.5	SW		Sand: Poorly sorted, fine to medium grained. Haeger Till.							

80.0 - 81.5	CL	Clay (80%), Silt (20%): Medium gray, soft, plastic, cohesive, moist, massive, 5N.								
85.0 - 86.5	ML	Silt (80%), Clay (20%): Medium light gray, calcareous, medium gray, (wet) 6N - 5N.								
90.0 - 91.5	SW	Sand: Poorly sorted, fine to medium grained. Haeger Till.								

PRELIMINARY DRAFT
SUBJECT TO REVISION

LOGGED BY W.J.Powell (1/16/90) DRILLING CONTR

DATE 7/21/89

P.E. LAMOREAUX & ASSOCIATES, INC. (PELA)

Jay S. Johnston

SL 30257

APPENDIX S-3

CROSS-SECTION C-C'

SOIL BOREHOLE LOG

<p>SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois</p> <p>Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois</p> <p>DATUM MSL ELEVATION 767.19 *</p>				DRILLING METHOD					BORING NO. US-3D		
									SHEET 1 of 2		
				SAMPLING METHOD					DRILLING		
				Samples collected by Ecology and Environment					START	FINISH	
				WATER LEVEL					TIME	TIME	
				TIME							
				DATE					DATE	DATE	
				CASING DEPTH							
DRILL RIG				SURFACE CONDITIONS							
				ANGLE	BEARING	* Top of concrete pad					
SAMPLE HAMMER TORQUE											
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS
7.5 - 9.0			Peat.								
11.5 - 13.0		SP	Silty clay - highly organic. pH. Sand (80%): Very fine grained, massive, well sorted, non-calcareous Silt (20%), 10YR 6/2.								
15.5 - 17.0	A	CL/ SW	A. Clay (80%), Silt (20%): Moist, organic pockets, 2mm layers of sand, very poorly sorted, subangular to subrounded, SYR 4/1 W/D.								
	B	GW	B. Gravel (50%): Subrounded to subangular dolomite-shale quartzite 1" - 1.5", sand (40%) very fine to coarse grained, very poorly sorted, silt (10%), 10YR 6/2 (d) 10YR 4/2 (w).								
20.5 - 22.0		GM	Silt (50%): Clayey, with gravel (30%), small to medium (3/4") dolomite shale quartzite, subangular to subrounded, sand (20%), very fine to coarse grained, subrounded, very poorly sorted, slightly calcareous, 10YR 4/2.								
30.5 - 32.0		SW/ GW	Sand (40%): Very fine to coarse grained, subrounded to subangular. Gravel (30%): As above, to 1", silt (20%), clay (10%), very poorly sorted, very slightly calcareous, SY 4/1 D/W.								
35.5 - 37.0		SW	Sand (80%): very fine to coarse grained, subangular, poorly sorted, trace silt, gravel (20%), as above, non-calcareous to very slightly calcareous, SY 4/1 D.								

DO NOT USE DRAFT
TO REVISION

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois		DRILLING METHOD	DRILLING NO. US-3D
		SAMPLING METHOD	SHEET 2 of 2
Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois		DRILLING	START FINISH
DATUM	MSL	TIME	TIME
DRILL RIG	ELEVATION	DATE	DATE
ANGLE	BEARING	CASING DEPTH	
		SURFACE CONDITIONS • Top of concrete pad	

DEPTH IN FEET (ELEVATION)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		TEST RESULTS
	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	
40.5 - 42.0	CL	Clay (45%); Massive, silt (55%), trace sand, slightly calcareous.	SAMPLER & BIT
43.0 - 44.5	CL	Clay; Silty, as above.	CASING TYPE
80.0 - 81.5	SP	Sand: Fine grained, well sorted. Haeger Till.	BLOWS/FOOT ON CASING

PRELIMINARY DRAFT
SUBJECT TO REVISION

LOGGED BY Jay S. Johnston SL 30259 DAT 7/21/89 CHK'D BY W. J. Powell DRILLING CONTR 0

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois				DRILLING METHOD				BORING NO. US-4D	
Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois				SAMPLING METHOD				SHEET 1 of 2	
				Samples collected by Ecology and Environment				DRILLING	
				WATER LEVEL				START	FINISH
				TIME				TIME	
DATE				DATE	DATE				
DATUM MSL ELEVATION 770.68 LS				CASING DEPTH					

DRILL RIG			SURFACE CONDITIONS										
ANGLE		BEARING											
SAMPLE HAMMER TORQUE													
DEPTH IN FEET (ELEVATION)	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	TEST RESULTS					
							BLOWS/FOOT ON CASING		WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS

7.5 - 9.0	2A	SP	2A Sand (70%): Fine to coarse grained, subrounded to subangular, non-calcareous, moderately sorted, subangular, shale clasts, subrounded dolomite clasts to 3/8", SYR 4/1 (D), SY 4/1 (W).									
Conin ued	2B	----- OH ----										
	2C	GM/ SW	Gravel (40%): Fine, subrounded, dolomite pebbles, slightly calcareous. 15% silt: organic 45% sand: very fine to coarse grained, non-calcareous, subrounded to subangular, very poorly sorted.									
12.5 - 14.0		SW	Sand (90%): Poorly sorted, very fine to very coarse grained, subrounded to subangular. Gravel (5%): Small, subrounded, dolomite shale pebbles. 5% Silt: Slightly organic, clayey, SYR 4/1 DW.									
17.5 - 19.0		SW	Sand (85%): Very fine to very coarse grained, subrounded, very poorly sorted. 5% Silt, 10% Gravel: Small, subrounded dolomite shale some 1" clasts. SY 6/1 (D) SY 4/1 (W).									
22.5 - 24.0		GW	Gravel (60%): Dolomite quartzite to 1/2", subrounded to subangular. Sand (40%): Very fine to very coarse grained, subrounded to subangular, some silt, poorly sorted.									
27.5 - 29.0		CL	Clay (50%): Massive. Silt (48%): Trace fine sand and fine gravel, SY 6/1 (D), SY 4/1 (W).									

*SOIL BOREHOLE LOG
TO PRECISION*

DRILLING CONTR

W. J. Powell (1/16/90)

CHK'D BY _____ DATE 7/20/89

LOGGED BY Jay S. Johnston

SOIL BOREHOLE LOG												
SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois				DRILLING METHOD				BORING NO. US-4D				
								SHEET 2 of 2				
Comment: EPA samples were described on 7/20 and 7/21/89 in Northbrook, Illinois				SAMPLING METHOD				DRILLING				
				Samples collected by Ecology and Environment				START	FINISH	TIME	TIME	
DATUM MSL ELEVATION 770.68 LS				WATER LEVEL					DATE	DATE		
				TIME								
				DATE								
CASING DEPTH												
DRILL RIG				SURFACE CONDITIONS								
ANGLE		BEARING										
SAMPLE HAMMER TORQUE												
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL				SAMPLER & BIT	CASING TYPE	TEST RESULTS			
			WATER CONTENT %	Liquid Limit %	Plastic	Specific Gravity			Other Tests			
32.5 - 34.0	A	CL	A. Clay: As above.									
	B	SW	B. Sand (60%): Very fine to very coarse grained, subangular, very poorly sorted. Gravel (20%): Fine grained, subrounded, shale and dolomite pebbles. Silt (15%), Clay (5%), 5Y 6/1 (D), 5Y 4/1 (W).									
60.0 - 61.5		CL	Clay (50%): Soft, plastic, massive, silty (45%), trace fine sand and fine grained gravel, 5YR 6/1 (D), 5 YR 4/1 (W).									
70.0 - 71.5	A	ML	A. Silt (90%): Massive with 10% clay, 10YR 6/2 (W).									
	B	SP	Sand: Very fine grained, well sorted, 10YR 8/2 (D).									
75.0 - 76.5		CL	Clay (60%): Massive. Silt (40%): Silt rich layers (2mm) - irregular, convolute (deformation structures).									
80.0 - 81.5		SP	Sand: Very fine to fine grained, well sorted. Silty clay rich zones. Top of Haeger Member of Wedron Formation.									
90.0 - 91.5			Sand. Haeger Member.									

P.E.LAMOREAUX SUBJECT TO REVISION
P.E.LAMOREAUX DRAFT

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

DRILLING METHOD: 4 1/4" IDHSA

BORING NO.
B1

SAMPLING METHOD: 2" OD SPLIT SPOON

SHEET
1 OF **1**

BORING LOCATION:
SE 1/4 of SE 1/4 of Section 8, T 46 N, R 10 E/W

NORTHING 2115338.7

EASTING

1053435.5

ELEVATION

774.7

CASING DEPTH

4/27/93

DATE

4/27/93

DRILL RIG CME 750 ATV

ANGLE

Vertical

HAMMER

TORQUE

ft-lbs

SAMPLE NUMBER

AND

DESCRIPTION OF MATERIALS

SAMPLER
AND BIT

CASING TYPE

BLOWS/FOOT
ON CASING

WATER
CONTENT

X LIQUID
LIMIT

X PLASTIC
LIMIT

X SPECIFIC
GRAVITY

X OTHER
TESTS

DEPTH
IN FEET

ELEVATION

RECOVERY

X SYMBOL

TEST RESULTS

FILL: Brown CLAY Over Black CLAY Cap Material

SS

SJC

LOGGED BY

DRILLING CONTR

E & F

DAP

CHEK'D BY

CHAS. MARKGRAF

RE-DRAWWN

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois	DRILLING METHOD: 4 1/4" IDHSA	BORING NO. B2	
	SAMPLING METHOD: 2" OD SPLIT SPOON		
BORING LOCATION: SE 1/4 of SE 1/4 of Section 8 , T 46 N, R 10 E/W	SHEET 1 OF 2		DRILLING
NORTHING 2115329.8 EASTING 1050990.5	TIME	START	FINISH
DATUM ELEVATION 772.1	DATE	4/26/93	DATE 4/27/93

DRILL RIG CME 750 ATV SURFACE CONDITIONS GRASS COVERED LANDFILL CAP

ANGLE Vertical BEARING -----

SAMPLE HAMMER TORQUE FT-LBS

DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
								WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY

768.1				FILL: Clay Cap Material to Approximately 4 Feet							
762.1	23 11	67		Refuse to Approximately 10 Feet							
761.1											
760.1	21 11	33		1 Tan Fine to Coarse SAND (SP) Peat and Organic CLAY (PT/OH)	SS						-
758.1	77 77	71		2 Soft Gray Fat CLAY (CH), Little to Some Sand, 1/4" Woody Peat Lense at 13.5 Feet	SS						-
756.1	65 76	71		3 Medium Dense Fine to Coarse SAND (SP), Trace to Little Fine Gravel	SS					-	-
755.1	36 10 12	25		4 Silty Fine to Coarse SAND (SM) 1" Silt Layer at 17 Feet Medium Dense Fine to Coarse SAND (SP), Trace Fine Gravel	SS						-
715 19 19	50			5 Trace to Little Silt 1/4" Silt Lenses at 21 and 21.9 Feet	SS						-
79 12 9	58			6 Grades to Fine to Coarse SAND (SP), Little to Some Fine Gravel	SS						-
78 8 12	58			7 Grades to Fine to Medium SAND	SS						-
46 8 10	38			8 Grades to Fine to Coarse SAND and Fine GRAVEL (SP/GP)	SS						-
45 7 10	54			9 Grades to Fine to Medium SAND (SP), Trace to Little Coarse Sand, Trace Gravel	SS						-
89 9 40	63			10 Fine to Medium SAND, Little Coarse Sand, Trace Fine Gravel	SS						-
739.1	85 3 5	71		11 Stiff Gray Silty Sandy CLAY (CL) Grades to More Clayey Sand and Silt (CL/ML)	SS						1.25-2.5
56 6 6	71			12 Gray Sandy Silty CLAY (CL) Silt Lenses	SS				23	9	-
46 7 10	83			13	SS						1.5
				14							

LOGGED BY SJC
DATE 9/22/93 CHK'D BY DAP

DRILLING CONTR E&F
CHAS. MARKGRAF
ID: WM1

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois

SHEET 2 OF 2

BORING NO. B2

DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY X	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS	TEST RESULTS			
				SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT X
734.1			Stiff Gray Lean Clay (CL), Little to Some Fine to Coarse Sand and Silt, Trace to Little Fine Gravel End of Boring at 38 Feet Boring Backfilled with Bentonite Slurry and Chips				
85							
80							
75							
70							
65							
60							
55							
50							
45							
40							

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 4 1/4" IDHSA				BORING NO. B3				
				SAMPLING METHOD: 2" OD SPLIT SPOON 2.5" ID SPLIT SPOON 22'-24'; SHELBY TUBE 48'-50'				SHEET 1 OF 2				
								DRILLING				
				WATER LEVEL				START	FINISH			
				TIME				TIME	TIME			
				DATE				DATE	DATE			
				CASING DEPTH				4/26/93	4/26/93			
BORING LOCATION: SE 1/4 of SE 1/4 of Section 8, T 46 N, R 10 E/W				SURFACE CONDITIONS GRASS COVERED LANDFILL CAP								
NORTHING 2115331.9 EASTING 105115.3 DATUM ELEVATION 773.7												
DRILL RIG CME 750 ATV ANGLE Vertical BEARING ----- SAMPLE HAMMER TORQUE FT-LBS												
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY X	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS		SAMPLER AND BIT	CASING TYPE	TEST RESULTS				
								WATER CONTENT X	LIQUID LIMIT X	PLASTIC LIMIT X	SPECIFIC GRAVITY	OTHER S
5				FILL: Clay Cap Material to Approximately 4 Feet								
10				FILL: Refuse to Approximately 10.5 Feet								
15	763.2	5 4 5 3	38	1	Black and Brown PEAT (PT) and Wood Chips Present		SS					-
20		1 1 2 2	33	2	Brown Organic CLAY to PEAT (PT/OH)		SS					-
25	753.7	2 3 7 8	67	3	2" Layer of Organic Silt and Clay, Over 1" Layer of Fine to Medium Sand Over Gray Organic Clay		SS					-
30		5 6 8 8	58	4	Medium Dense Gray Fine to Medium SAND (SP)		SS					-
35	754.7	5 2 1 1	67	5	Gray Organic CLAY (OH)		SS					-
		5 8 1 0 8	50	6	Medium Dense Fine to Coarse SAND (SP), Little Fine Gravel		SS					-
		7 1 7 1 8 1 5	75	7	Some Gravel, Little Silt, Trace Clay		SS					-
		5 6 1 0 1 1	58	8	Grades to Fine then Coarse Sand		SS					-
		5 6 1 3 1 0	25	9			SS					-
		4 5 6 6	79	10	1/2" Gray SILT to Clayey Silt Lens at 28'		SS					-
		6 8 9 9	42	11	Medium Dense Fine to Coarse SAND and Trace to Little Fine Gravel, Trace Coarse Sand		SS					-
		6 7 8 9	50	12	2" Fine to Medium Sand Lens, Grades to Fine to Coarse SAND and Fine GRAVEL (SP/GP)		SS					-
		6 8 9 1 0	63	13	Medium Dense Fine to Coarse SAND (SP), Little to Some Fine Gravel Trace Coarse Sand		SS					-
		12 8 8 8	67	14			SS					-
LOGGED BY <u>SJC</u>				DRILLING CONTR <u>E&F</u>								
DATE <u>9/22/93</u>				CHK'D BY <u>DAP</u>				<u>CHAS. MARKGRAF</u>				
								ID: WM1				

SOIL BOREHOLE LOG

**SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois**

SHEET 2 OF 2

BORING NO.
B3

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 4 1/4" IDHSA				BOARING NO. B4							
				SAMPLING METHOD: 2" OD SPLIT SPOON 2 1/2" ID				SHEET 1 OF 2							
				SPLIT SPOON 37'-39'				DRILLING							
								START	FINISH						
				WATER LEVEL				TIME	TIME						
				TIME											
				DATE				DATE	DATE						
				CASING DEPTH				4/23/93	4/23/93						
BORING LOCATION: SE 1/4 of SE 1/4 of Section 8 , T 46 N, R 10 E/W				SURFACE CONDITIONS GRASS COVERED LANDFILL CAP											
NORTHING 2115328.1 EASTING 1051350.4															
DATUM ELEVATION 774.1															
DRILL RIG CME 750 ATV															
ANGLE Vertical BEARING -----															
SAMPLE HAMMER TORQUE FT-LBS															
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
				WATER CONTENT %	Liquid Limit %	Plastic Limit %	Specific Gravity				Other Tests				
770.1	2 10 6 4	25		FILL: Blind Drilled to 5 Feet Brown and Black Clay Cap Material	SS										
760.6	5 73 4	17		FILL: Refuse Paper, Metal, Plastic, Etc.	SS										
757.6	3 77 8	67		FILL: Refuse Concrete, Paper, Plastic, Metal, Etc.	SS										
757.6	5 78 9	71		Medium Dense Tan Fine Silty SAND to Fine Sandy SILT (SM)	SS										
757.6	3 45 7	75		Medium Dense Gray Fine SAND (SP), Trace to Little SILT	SS										
757.6	4 56 7	71		Loose Brown Fine SAND (SP), Trace Silt, Trace to Little Medium Sand	SS										
757.6	3 46 8	54		Medium Dense Brown Fine to Medium SAND Grades to Fine to Coarse SAND and Fine GRAVEL (SP/GP)	SS										
757.6	5 77 7	67		Fine to Coarse SAND (SP), Little Fine Gravel	SS										
757.6	2 57 8	75			SS										
757.6	-	75			SB										
888.10	8 88 10	67		Sand Grades Fine to Coarse Medium Dense Gray Fine to Medium SAND (SP)	SS										
610.11.13	6 10 11 13	88		SILT and SAND (SP/ML)	SS										
578.8	5 78 8	71		Medium Dense Fine Sandy SILT to Silty SAND (SM), Silt	SS										

LOGGED BY SJC
DATE 9/22/93 CHK'D BY DAP

DRILLING CONTR E&F
CHAS. MARKGRAF ID: WM1

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,		SHEET 2 of 2	BORING NO. B4		
DEPTH IN FEET (ELEVATION)	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS	TEST RESULTS			
		BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLER AND BIT
567.9	71	14 and Sand Fine Sand, Some Silt, Trace Clay and Gravel	SS	SS	-
678.10	75	15	SS	SS	-
589.11	96	16 Fine Sand, Little Medium Sand	SS	SS	-
433.5	96	17 Medium Dense Fine to Coarse SAND (SP), and Fine Gravel	SS	SS	-
11109.10	75	18 Medium Dense Fine to Coarse SAND (SP), Trace to Little Fine Gravel	SS	SS	-
727.1	-	19 Stiff Gray Lean CLAY (CL); Little to Some Silt, Little Fine to Coarse Sand, Trace Gravel	SB	25	11 15- 20
725.1		End of Boring at 49 Feet Boring Backfilled with Bentonite Slurry and Chippings			

85
80
75
70
65
60
55

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 4 1/4" IDHSA					BORING NO. B5			
				SAMPLING METHOD: 2" OD SPLIT SPOON					SHEET 1 OF 2			
									DRILLING			
				WATER LEVEL					START	FINISH		
				TIME					TIME	TIME		
				DATE					DATE	DATE		
				CASING DEPTH					4/23/93	4/23/93		
BORING LOCATION: SE 1/4 of SE 1/4 of Section 8 , T 46 N, R 10 E/W NORTHING 2115444.5 EASTING 1051463.4 DATUM ELEVATION 775.2				SURFACE CONDITIONS GRASS COVERED LANDFILL CAP								
DRILL RIG CME 750 ATV ANGLE Vertical BEARING ----- SAMPLE HAMMER TORQUE FT-LBS												
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY X	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS			SAMPLER AND BIT	CASING TYPE	TEST RESULTS			
									WATER CONTENT X	LIQUID LIMIT X	PLASTIC LIMIT X	SPECIFIC GRAVITY
5				FILL: Brown Clay Cap Material to 5 Feet Blind Drilled to 10 Feet								
10	5 8 5 12	25		FILL: Refuse and Clay								
15	6 6 6 12	13		1 FILL: Refuse			SS					
758.2	5 10 11 12	79		2 Refuse, Little Sand in Tip of Spoon			SS					
20	5 6 11 12	63		3 Medium Dense Fine to Medium SAND (SP), Trace to Little Clayey Sand			SS					
25	5 2 1 1	46		4 2" Organic Sandy Clay, Wood Fibers in End of Spoon			SS					
30	5 12 13 16	25		5 Medium Dense Fine to Medium SAND (SP) Grades to Fine to Coarse Little Fine Gravel, Little Clay			SS					
35	5 8 10 9	50		6 Medium Dense Fine to Coarse SAND (SP), Little Fine Gravel			SS					
40	3 6 9 10	71		7 Fine to Coarse Sand, Some Gravel, Little Silt, Trace Clay			SS					
45	5 7 8 8	83		8 Grades to Medium Dense Fine SAND (SP), Less Coarse Sand, Grades Back to Fine to Coarse Sand			SS					
50	10 9 10 10	67		9 3" Gray Clayey Silt Layer Over Fine Silty SAND (SM), Grades to Fine to Coarse Sand in Tip of Spoon			SS					
55	6 9 11 14	67		10			SS					
60	7 10 10 11	67		11			SS					
65	740.2			12			SS					

LOGGED BY SJC
 DATE 9/22/93 CHK'D BY DAP

DRILLING CONTR E&F
CHAS. MARKGRAF
 ID: WM1

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

SHEET

2 QF 2

BORING NO.-

B5

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois Note: EPA samples were described on 7/20/89 and 7/21/89 in Northbrook, Illinois.	DRILLING METHOD	BORING NO.				
		US-6D				
	SAMPLING METHOD	SHEET 1 of 2				
		Samples collected by Ecology and Environment				
	DRILLING					
	WATER LEVEL					
	TIME					
	DATE					
DATUM MSL ELEVATION 767.01 *	CASING DEPTH					

DRILL RIG			SURFACE CONDITIONS								
ANGLE		BEARING		• Top of concrete pad							
SAMPLE HAMMER TORQUE											
DEPTH IN FEET (ELEVATION)				TEST RESULTS							
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY	OTHER TESTS

7.0 - 8.5		OH	Topsoil: Dark brown, organic, silty, few dolomite pebbles, SYR 2/1.				
15.0 - 16.5		OH	Clay (50%) - Silt (40%) - Dark brown, organic, rich, non-calcareous, SY 4/1.				
20.0 - 21.5		SP	Sand (95%): Fine to medium grained, well sorted, non-calcareous, subrounded, trace coarse sand, some rounded small dolomite gravel, 10YR 5/4 DW.				
25.0 - 26.5		GW	Gravel (75%) with sand (20%) fine to coarse, poorly sorted, subangular to subrounded, gravel - fine rounded dolomite to shale; shale flat, more angular. very slightly calcareous, 10YR 6/2 (D), 10YR 4/2 (W).				
30.0 - 31.5		SP	Sand (90%): Very fine to medium grained, well sorted, subrounded. 10% Silt, 10YR 7/4 (D), 10YR 6/2 (W).				
35.0 - 36.5		SP	Sand (80%): Very coarse, moderately sorted, subrounded, and gravel (20%) fine subrounded, dolomite and shale. Slightly calcareous, SY 7/2, SYR 7/2.				

CHK'D BY W. J. Powell (1/16/90) DRILLING CONTR

CHK'D BY W. J. Powell (1/16/90)

Jays Johnson

LOGGED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois			DRILLING METHOD			BORING NO. US-6D	
						SHEET 2 of 2	
SAMPLING METHOD						DRILLING	
Samples collected by Ecology and Environment						START	FINISH
WATER LEVEL						TIME	TIME
TIME							
DATE						DATE	DATE
DATUM MSL	ELEVATION	767.01	CASING DEPTH				

DRILL RIG			SURFACE CONDITIONS				
ANGLE	BEARING	• Top of concrete pad					
SAMPLE HAMMER TORQUE							
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		SAMPLER & BIT	CASING TYPE	TEST RESULTS
						BLOWSF/FOOT ON CASING	WATER CONTENT % LIQUID LIMIT % PLASTIC SPECIFIC GRAVITY OTHER TESTS
40.0 - 41.5		GW	Gravel (90%): Fine-medium grained, subrounded, dolomite and shale. Sand (10%): Very coarse grained, as above, SYR 7/2, SYR 5/2.				
45.0 - 46.5		ML	Silt (30%): Calcareous, with very poorly sorted, sand. Gravel (10%): Fine, medium, subrounded, dolomite-shale. 10YR 6/2 (D).				
		CL	Clay (30%): SYR 5/2 (W). Sand (30%): Very fine to coarse grained, subrounded.				
55.0 - 56.5		CL	Clay (45%) - Silty (50%), massive, 5% fine dolomite shale pebbles, SYR 6/1 (D), SY 4/1 (W).				
57.0 - 59.0		SM ML CL	2" Sand (50%), medium to coarse grained, subrounded, silty (45%). 5% small dolomite pebbles, 10YR 6/2 (D), 10YR 6/2 (W). 2" Silt - irregular 2mm seams of interstratified silt and clay rich layers - small microfractures to 4mm, subvertical-displacement, SY 6/1 (D), SY 4/1 (W). 2" Clay: Silty, as above, 60% clay, no gravel, plastic.				
72.0 - 73.5		CL	Clay (60%) - Slightly calcareous, plastic, massive, silty sand increasing to base, SYR 6/1. Silt (30%) Sand (5%): Very fine grained, subrounded. Gravel (5%): Fine dolomite-quartzite.				
74.5 - 76.0		SP	Sand (95%) - Fine to coarse grained, moderately sorted, varied lithology, some fine gravel, non-calcareous, Haeger Till.				

LOGGED BY	Jay S Johnston	SL 30266	DATE	07/20/89	CHK'D BY	W. J. Powell (1/16/90)	DRILLING CONTR

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APPENDIX S-4

CROSS-SECTION D-D'

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill		DRILLING METHOD Hollow-stem auger	BORING NO. LB-7 (B-3)
		SAMPLING METHOD Split spoon	SHEET 1 of 11
			DRILLING
		START	FINISH
		TIME	TIME
		11:50 AM	3:30 PM
		DATE	DATE
		8/21/89	8/22/89
DATUM MSL ELEVATION 771.54' LS	CASING DEPTH		

DRILL RIG CME 75 - ATV SURFACE CONDITIONS Dry 15.0' from the easternmost

ANGLE Vertical BEARING bank of Sequoit Creek

SAMPLE HAMMER TORQUE 140 FT-BLS

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	TEST RESULTS				
					CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT %	Liquid Limit %	PLASTIC

0 - 1.0			Not sampled.							
1.0 - 2.5	... (5)	OL/ OH	1.0" organic topsoil with grass and rootlets; 3.0" fill material, clay, silty with 15% fine to coarse sand, olive gray. Pushed spoon 18.0". 5Y 6/1							
2.5 - 4.0	3-4-5 (18)	CL	Clay, silty, with 10% fine to coarse sand, mottled, disturbed sample, olive gray to medium gray. Fill. 5N - 5Y 6/1							
4.0 - 5.5	3-2-3	CL	Clay, as above to 4.7" - 5.0" clay, silty, dark yellowish-brown and medium gray. Fill. 5 N - 10YR 4/2							
5.5 - 7.0	...		No recovery.							
7.0 - 8.5	2-3-3	CL	Clay, silty, with 15% coarse to fine sand, moderately well to well rounded, layered with organic-rich silt, dusky yellow and medium gray. 5 N - 5Y 6/4, Fm							

SOIL BOREHOLE LOG

SITE NAME AND LOCATION			DRILLING METHOD	Hollow-stem auger	BORING NO.	LB-7 (B-3)
HOD Landfill Antioch, Illinois			SAMPLING METHOD	Soil spoon	SHEET	2 of 11
Western boundary of landfill			DRILLING		Patrick Engineering	
DATUM	MSL	ELEVATION	771.54' LS	CASING DEPTH		
DRILL RIG	CME 75 - ATV	ANGLE	Vertical	BEARING	SURFACE CONDITIONS	Dry 15.0' from the easternmost bank of Sequoit Creek
SAMPLE HAMMER TORQUE	140 FT-BLS	DEPTH IN FEET (ELEVATION)		SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	
8.5- 10.0	2-2-3 (10)	CL	Clay, silty, medium gray, with peat, with rootlets grading into organic-rich silt with mica, dark brown and dusky yellow. 5N - 10YR 2/2. Fm		SAMPLER & BIT	TEST RESULTS
10.0- 11.5	10- (12)	CL/ MH	Clay, very silty with silt layers and a 1.0" thick fine grained sand lens, angular to subangular, dusky yellow and very dark gray. 5Y 6/4 - 2N. Fm		CASING TYPE	
11.5- 13.0	2-2-4 (15)	CL	Clay, silty with 10% fine to coarse sand and < 2 gravel 2.0" in diameter, medium gray. 5N, Dmm(f)		BLOWS/FOOT ON CASING	
13.0-	2-2-3	CL	Clay, silty with 5% fine to coarse grained sand, moist, 5% subrounded gravel up to 0.5" in diameter, medium gray, dusky yellow. 5N - 5Y 6/4, Dmm(f)		WATER CONTENT %	
14.5-	2-2-4	MH	Silt, clayey, dusky yellow and medium gray, very moist. 5Y 6/4 - 5N. Drss		LIQUID LIMIT %	
15.0-	-	CL	Clay, silty with 10% fine to coarse sand and a 6" sandy-silt lens at 15.7', medium gray and dusky yellow. 5N - 5Y 6/4, Drss		PLASTIC	
17.5	- 4-4				SPECIFIC GRAVITY	
					OTHER TESTS	

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SOIL BOREHOLE LOG

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LOGGED BY Wayne Townser

SI 30149

DATE 8/21/89

CHK'D BY W. J. Powell, 1/16/00

DRILLING CONTR

Patrick Engineering

SOIL BOREHOLE LOG

SITE NAME AND LOCATION	DRILLING METHOD	Hollow-stem auger	BORING NO.	LB-7 (B-3)
HOD Landfill Antioch, Illinois	SAMPLING METHOD	Split spoon	SHHEET	4 of 11
Western boundary of landfill			DRILLING	

DATUM MSL ELEVATION 771.54' LS DRILL RIG CME 75 - ATV SURFACE CONDITIONS Dry 15.0' from the easternmost

ANGLE Vertical BEARING bank of Sequoit Creek

SAMPLE HAMMER TORQUE 140 FT-BLS

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	TEST RESULTS	
				SAMPLER & BIT	CASING TYPE
26.5 - 28.0	2-3-5	CL	Clay, silty, with 5% coarse sand with a 2.0" silt layer at 27.2'. medium gray. 5N, Dmm		
28.0 - 29.5		CL	Clay, very silty with 5% to 10% coarse sand, medium gray. 5N, Dmm		
29.5 - 31.0	1-3-4	CL	Clay, very silty with 5% coarse rounded sand, medium gray. 5N, Dmm		
31.0 - 32.5		CL	As above.		
32.5 - 34.0	3-4-6	CL	As above.		
34.0 - 35.5	8-10-	CL	Clay, very silty with 10% coarse rounded sand and 5% fine subrounded gravel, medium gray. 5N, Dmm		
35.5	11				

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Clay, silty with 10% coarse rounded sand and 5% fine subrounded gravel, medium gray. 5N, Dmm

SOIL BOREHOLE LOG

SITE NAME AND LOCATION		DRILLING METHOD Hollow-stem auger		BORING NO LB-7 (B-3)
HOD Landfill Antioch, Illinois		SHEET 5 of 11	Patrick Engineering	
Western boundary of landfill		SAMPLING METHOD Split spoon		DRILLING
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	ANGLE Vertical	BEARING	WATER LEVEL
ANGLE Vertical	BEARING	SAMPLE HAMMER TORQUE	140 FT-BLS	TIME
DEPTH IN FEET (ELEVATION)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS
DEPTH IN FEET (ELEVATION)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	WATER CONTENT %
DEPTH IN FEET (ELEVATION)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	LIQUID LIMIT %
DEPTH IN FEET (ELEVATION)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	PLASTIC
DEPTH IN FEET (ELEVATION)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	SPECIFIC GRAVITY
DEPTH IN FEET (ELEVATION)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	OTHER TESTS
35.5 - 37.0	CL	Clay, silty with 10% to 15% well rounded sand to 36.5'; 36.5' to 37.0'	bank of Sequoia Creek	
37.0 - 38.5	MH	Silt, clean, moist, medium gray. SN, Dms(c)		
38.5 - 40.0	MH	Silt, with 15% very fine grained well rounded sand, moist, medium gray. SN, Dms(c)		
40.0 - 41.5	MH	Silt and 30% very fine grained sand, clean, moist, medium gray. SN, Dms(c)		
41.5 - 43.0	MH	As above.		
43.0 - 44.5	CL	To 43.3' as above; 43.3' to 44.5' clay, silty, medium gray. SN, Dms(c)		

LOGGED BY

Wayne Townsend

SL 30151

DATE 8/21/89

CHK'D BY

W. J. Powell, 1/16/90

DRILLING CONTR

Patrick Engineering

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill		DRILLING METHOD Hollow-stem auger	BORING NO LB-7 (B-3)
		SAMPLING METHOD Split spoon	SHEET 6 of 11
			DRILLING
		WATER LEVEL	START TIME 11:50 AM
		TIME	FINISH TIME 3:30 PM
		DATE	DATE 8/21/89
		CASING DEPTH	DATE 8/22/89

DATUM MSL ELEVATION 771.54' LS

DRILL RIG CME 75 - ATV

ANGLE Vertical

ELEVATION 140 FT-BLS

SURFACE CONDITIONS

Dry 15.0' from the easternmost

bank of Sequoit Creek

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	TEST RESULTS					
				SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT *	PLASTIC
44.5-	57.8	MH	Silt, clayey with 5% medium and coarse subrounded sand, medium gray. 5N, Dms(c)						
46.0									
48.0-									
47.5	15-19-	MH	Silt, clay, upper 0.4' very clayey with 10% medium to coarse grained sand, medium gray. 5N, Dms(c)						
21									
47.5-	49.0	MH	Silt, clayey with 15% fine to coarse subrounded sand, medium gray. 5N, Dms(c)						
49.0-	6-10-	MH	Silt, clayey with 10% fine to coarse subrounded coarse grained sand, medium gray. 5N, Dms(c)						
50.5	6-8-11	MH	Silt, clayey with 10% fine to coarse subrounded coarse grained sand, medium gray. 5N, Dms(c)						
50.5-	52.0	MH	Silt, clayey with 10% fine to coarse subrounded coarse grained sand, medium gray. 5N, Dms(c)						
52.0-	53.5	MH	Silt, clayey with 10% fine to coarse subrounded coarse grained sand, medium gray. 5N, Dms(c)						
53.5	7-8-	No recovery.							

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SOIL BOREHOLE LOG

SITE NAME AND LOCATION				DRILLING METHOD Hollow-stem auger				BORING NO.	
HOD Landfill Antioch, Illinois Western boundary of landfill								LB-7 (B-3)	
								SHEET 7 of 11	
								DRILLING	
								START	FINISH
				WATER LEVEL				TIME	TIME
				TIME				11:50 AM	3:30 PM
				DATE				DATE	DATE
DATUM MSL ELEVATION 771.54' LS				CASING DEPTH				8/21/89	8/22/89
DRILL RIG CME 75 - ATV				SURFACE CONDITIONS Dry 15.0' from the easternmost bank of Sequoit Creek					
ANGLE Vertical BEARING									
SAMPLE HAMMER TORQUE 140 FT-BLS									
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS		
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %
53.5 - 55.0	15-14- 17	CL	Clay, silty with 10% coarse subrounded sand grains, trace of medium gravel, medium gray. 5N, Dms(c)						
55.0 - 56.5	5-8-10	CL	Clay, as above to 55.8'; 55.8' to 56.5' silt, clayey with 5% coarse subrounded sand, medium gray. 5N, Dms(c)						
56.5 - 58.0	9-11- 14	CL	Silt, clayey, clean, stiff, olive gray. 5Y 3/2, Dms(c)						
58.0 - 59.5	4-4-6	CL	Clay, silty with trace of fine grained sand, medium gray to olive gray. 5N - 5Y 3/2, Dmm						
59.5 - 61.0	1-5-6	CL	Clay, silty 5% fine to coarse sand, medium gray and olive gray. 5N - 5Y 3/2, Dmm						
61.0 - 62.5	- 4-5	CL	Clay, silty with < 5% fine grained sand, medium gray. 5N, Dmm						

Autodesk Engineering

DRILLING CONTROL

W. J. Powell 1/16/00

CHIK'D BY

DATE

53

Wayne Townsend

OCCIDENTAL

SOIL BOREHOLE LOG

SITE NAME AND LOCATION		BOREHOLE LOG	
DEPTH IN FEET (ELEVATION)	SYMBOL	DRILLING METHOD	BORING NO.
HOD Landfill Antioch, Illinois		Hollow-stem auger	LB-7 (B-3)
Western boundary of landfill		SAMPLING METHOD	SHEET 8 of 11
CATUM MSL	771.54' LS	WATER LEVEL	DRILLING
DRILL RIG CME 75 - ATV	ANGLE Vertical	TIME	START TIME
SAMPLE HAMMER TORQUE 140 FT-BLS	BEARING	DATE	FINISH DATE
SURFACE CONDITIONS		CASING DEPTH	DATE
bank of Sequoit Creek			
SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		TEST RESULTS	
SAMPLER & BIT		TEST RESULTS	
CASING TYPE		TEST RESULTS	
BLOWS/FOOT ON CASING		TEST RESULTS	
WATER CONTENTS %		TEST RESULTS	
LIQUID LIMIT %		TEST RESULTS	
PLASTIC		TEST RESULTS	
SPECIFIC GRAVITY		TEST RESULTS	
OTHER TESTS		TEST RESULTS	

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~~BY JEFFREY L. KLEIN~~
SUBJECT TO REVISION

SUBJECT TO REVISION	
62.5- 64.0	No recovery.
64.0- 65.5	Clay, silty with < 5% fine sand to 65.2'; 65.2' to 65.5' silt, clayey, medium gray. SN, Dms
65.5- 67.0	MH Silt, clayey with 5% fine to coarse subrounded sand, trace fine gravel, medium gray. SN, Dms
67.0- 68.5	CL Clay, silty with trace of fine to coarse sand, trace of fine gravel, medium gray. SN, Dms
68.5- 70.0	CL Clay, very silty, with 5% fine to coarse subrounded sand with trace of fine gravel, medium gray. SN, Dms
70.0- 71.5	CL 70.0' to 71.0' clay, silty with 10% fine to coarse sand; 71.0' to 71.5' sand and 30% gravel, medium to coarse, clayey, medium gray. Rubble zone or gravel has aroma and sheen of foreign material; PAH - aroma: H-Nu - 3 ppm, SN, Dms SW
73.5-74.3	CL

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

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B-1

[B-1] [B-3]

HOD Landfill
Antioch, Illinois

Western boundary of landfill

SOIL BOREHOLE LOG	
SITE NAME AND LOCATION	BORING NO.
HOD Landfill Antioch, Illinois	LB-7 (B-3)
Western boundary of landfill	SHOOT 9 of 11
SAMPLING METHOD	DRILLING
Soil spoon	START FINISH
WATER LEVEL	TIME TIME
TIME	11:50 AM 3:30 PM
DATE	DATE DATE
CASING DEPTH	8 / 21 / 89 8 / 22 / 89
DATUM MSL ELEVATION	771.54' LS
GROUT CONDITIONS: Dry 15.0' from the easternmost	
DRILLING CONTR: Patrick Engineering	

DRILLING CONTR

J. J. Powell, 1/16/90

CHK'D BY

DATE 8/22/89

LOGGED BY Wayne Townsend SL30155

SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill		DRILLING METHOD Hollow-stem auger	BORING NO. LB-7 (B-3)
		SAMPLING METHOD Split spoon	SHEET 10 of 11
			DRILLING
		WATER LEVEL	START FINISH
		TIME	TIME 11:50 AM 3:30 PM
		DATE	DATE 8/21/89 8/22/89
DATUM MSL ELEVATION 771.54' LS		CASING DEPTH	

DRILL RIG CME 75 - ATV	SURFACE CONDITIONS Dry 15.0' from the easternmost bank of Sequoit Creek						
ANGLE Vertical	BEARING						
SAMPLE HAMMER TORQUE 140 FT-BLS							
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS

DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS
80.5 - 82.0	...	CL	As above.				
82.0 - 83.5			Not sampled.				
83.5 - 85.0			Not sampled.				
85.0 - 86.5	5-7-8	CL	Clay, stiff with 20% coarse to very coarse subrounded sand, medium gray. 5N, Dmm				
86.5 - 88.0	5-2-3	CL/SM	86.0' to 87.0' as above; 87.0' - 89.0' sand, predominantly fine to medium grained, moderately well sorted, subangular to subrounded. Top of sand 87.0'.				
88.0 - 89.5			Not sampled because of flowing sand.				

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Patrick Engineering

— DRILLING CONTR

W. J. Powell, Inc.

C-H-K'D BY

DATE

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SOIL BOREHOLE LOG

SITE NAME AND LOCATION HOD Landfill Antioch, Illinois Western boundary of landfill			DRILLING METHOD Hollow-stem auger	BORING NO. LB-7 (B-3)			
			SAMPLING METHOD Split spoon	SHEET 11 of 11			
				DRILLING			
				START	FINISH		
			WATER LEVEL	TIME	TIME		
			TIME	11:50 AM	3:30 PM		
			DATE	DATE	DATE		
			CASING DEPTH	8/21/89	8/22/89		
DATUM MSL ELEVATION 771.54' LS			SURFACE CONDITIONS Dry 15.0' from the easternmost bank of Sequoit Creek				
DRILL RIG CME 75 - ATV			ANGLE Vertical BEARING				
SAMPLE HAMMER TORQUE 140 FT-BLS							
DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS
89.5 - 91.0	--1-2	SM	Sand, as above to 89.5'; 91.0' sand, clayey, very fine to fine grained, medium gray. 5N				
91.0 - 94.5			Not sampled because of flowing sand.				
94.5 - 96.0	7-15- 22	SM	Sand, silty, fine to medium grained, well sorted, subrounded to well rounded, brownish-gray.				
96.0 - 99.5			Advanced borehole to 99.5'.				
99.5			Total depth.				

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SUBJECT TO REVISION**

Patnick Engineering

DRILLING CONTR

W.J. Powell, 11/16/90

CHKD BY

DATE 8/22/89

LOGGED BY Wayne Townsend

SL 30157

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

DRILLING METHOD: 10 1/4" ID HSA BORING NO.
LP3

BORING LOCATION:

SE 1/4 of SE 1/4 of Section 8, T 46 N, R 10 E/W
BORTHING 2116428.7 EASTING 1050318.9

JATUM DATE

RILL RIG CME 75 ELEVATION 778.1 SURFACE CONDITIONS GRASS COVERED LANDFILL CAP

ANGLE Vertical BEARING -----

SAMPLE HAMMER TORQUE FT-LBS

DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY % SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS	TEST RESULTS			
				SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	WATER CONTENT % LIQUID LIMIT % PLASTIC LIMIT % SPECIFIC GRAVITY OTHER TESTS
-5	773.1		FILL: Blind Drill to 15 Feet Brown Clay to Approximately 5 Feet then Black Clay and Little Refuse to Approximately 8 Feet then more Refuse and Little Clay to 10 Feet				
-10			FILL: Black Clay and Refuse				
-15			Refuse - Metal, Wood, Plastic, Paper, etc. and Black Clay				
-20	-	50	1 Black Wet Refuse - Paper and Wood 30 - 50% LEL from Auger Head and After Collected Sample	SS			
-25	-	4	2 Brown Clay and Black Refuse - Wood	SS			
-30	747.1	5 10 19 18	3 Gray Clayey SILT (ML) Fine to Coarse SAND and Fine GRAVEL (SP/GP), Clay Lens at Approximately 31 3/4' LEL From Auger Head 15-30% LEL From Auger Head	SS			
-35	743.2	9 10 742.1	4 Fine to Coarse SAND (SP) Grading to Fine to Medium Sand 5 - 15% LEL in Augers End of Boring at 37 Feet Leachate Piezometer Set at 25.5 Feet PID = None Detected	SS			
-40							

WATER LEVEL	TIME	DATE	CASING DEPTH	TEST RESULTS	
				TIME	DATE
				4/28/93	4/28/93

LOGGED BY SJC

DRILLING CONTR E & F

PLATE NO. 201

DATE 9/18/93

CHK'D BY DAP

CHAS. MARKGRAF

ID-WM1

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 10 1/4" ID HSA				BORING NO. LP4							
								SHEET 1 OF 2							
								DRILLING							
								START	FINISH						
				WATER LEVEL				TIME	TIME						
				TIME				12:30	14:00						
				DATE				DATE	DATE						
				CASING DEPTH				5/3/93	5/4/93						
DRILL RIG CME 75				SURFACE CONDITIONS GRASS COVERED LANDFILL CAP											
ANGLE Vertical BEARING -----															
SAMPLE HAMMER TORQUE FT-LBS															
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
				WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY				OTHER TESTS				
784.9				Grass Surface Brown/Gray Silty Clay, Cap Material											
5				Black Clay and Refuse											
10															
15															
20															
25	10 13 21 22	50		1 Refuse					SS						
30	11 12 19 17	40		2 Refuse					SS						
35	5 7 6 8	40		3 Refuse					SS						
40	4 8 11 13	50		4 Refuse					SS						
45	7 8 12 13	50		5 Refuse					SS						
748.9															
LOGGED BY PMS				DRILLING CONTR E & F											
DATE 9/17/93				CHK'D BY DAP				BRANDON POWERS				ID: WM1			

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

SHEET

2 OF 2

BORING NO

LP4

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 10.25" ID HSA				BORING NO. LP5					
								SHEET 1 OF 2					
				SAMPLING METHOD: 3" SPLIT SPOON				DRILLING					
								START	FINISH				
				WATER LEVEL				TIME	TIME				
				TIME				7:30	12:00				
				DATE				DATE	DATE				
				CASING DEPTH				4/20/93	4/21/93				
DRILL RIG CME 75				SURFACE CONDITIONS									
ANGLE Vertical BEARING -----													
SAMPLE HAMMER TORQUE FT-LBS													
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	TEST RESULTS			
				WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY			OTHER TESTS			
				Grass Surface Lt. Brown Clay (CL) Some Silt and Gravel									
5	792.1			Dark Gray Silty Organic Clay with Refuse									
10													
15													
20													
25													
30													
	5 10 12 7	50	1	Refuse					SS				
35	100/6*	25	2						SS				
	10 12 9 11	75	3						SS				
LOGGED BY PMS				DRILLING CONTR E & F									
DATE 9/17/93				CHK'D BY DAP				BRANDON POWERS					
												ID: WM1	

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

SHEET

2 OF 2

BORING NO.

LP5

SOIL BOREHOLE LOG

SOIL BOREHOLE LOG

**SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois**

SHEET

2 OF 2

BORING NO.

LP7

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 10.25" ID HSA				BOREING NO. LP8						
								SHEET 1 OF 2						
				SAMPLING METHOD: 3" SPLIT SPOON										
								DRILLING						
								START	FINISH					
								TIME	TIME					
BORING LOCATION: SW 1/4 of SW 1/4 of Section 9 , T 46 N, R 10 E/W								14:00	17:00					
NORTHING 2116218.6 EASTING 1052519.4								DATE	DATE					
DATUM ELEVATION 793.5								4/23/93	4/27/93					
DRILL RIG CME 75				SURFACE CONDITIONS										
ANGLE Vertical BEARING -----														
SAMPLE HAMMER TORQUE FT-LBS														
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	TEST RESULTS				
										WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OTHER TESTS
5														
786.5				Grass Surface Brown Silty Clay with Trace Gravel										
10														
15														
20														
25														
30														
	88 22 17	50	1	Refuse										
35	17 19 10 21	55	2	Refuse				SS						
								SS						
LOGGED BY PMS				DRILLING CONTR E & F										
DATE 9/17/93				CHK'D BY DAP				BRANDON POWERS						
												ID-WM1		

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

SHEET

BORING NO.
LP8

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 10.25" ID HSA				BORING NO. LP9						
								SHEET 1 OF 2						
				SAMPLING METHOD: 3" SPLIT SPOON										
								DRILLING						
				WATER LEVEL				START	FINISH					
				TIME				TIME	TIME					
				DATE				DATE	DATE					
				CASING DEPTH				4/21/93	4/23/93					
BORING LOCATION: SW 1/4 of SW 1/4 of Section 9 , T 46 N, R 10 E/W NORTHING 2116220.4 EASTING 1052769.9 DATUM ELEVATION 785.8				SURFACE CONDITIONS										
DRILL RIG CME 75														
ANGLE Vertical BEARING -----														
SAMPLE HAMMER TORQUE FT-LBS														
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	TEST RESULTS				
										BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY
5				Grass Surface Light Brown Silty Clay with Trace Fine to Coarse Sand										
10				Black Clay and Refuse										
15														
20														
25														
30	11/10/ 60/14	50	1	Refuse					SS					
35	11 21	55	2	Refuse					SS					
	5 7 8 22	50	3	Refuse					SS					
LOGGED BY PMS				DRILLING CONTR E & F										
DATE 9/17/93				CHK'D BY DAP				BRANDON POWERS						
												ID-WM1		

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

SHEET

2 OF 2

BORING NO.

LP9

DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
								WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OTHER TESTS
45	5 6 7 10	75	██████	Refuse	SS							-
46	100/4"	15	██████	Refuse	SS							-
47	8 28 9 10	55	██████	Refuse	SS							-
48	8 10 16 18	50	██████	Refuse	SS							-
49	4 6 6 11	30	██████	Refuse	SS							-
50	4 8 10 12	65	██████	Refuse	SS							-
51	100/1"	100	██████	Refuse	SS							-
52	10 15 7 6	25	██████	Refuse	SS							-
53	100/8"	33	██████	Refuse	SS							-
54	5 7 8 8	50	██████	Refuse	SS							-
55												
56												
57												
58												
59												
60												
61												
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91												
92												
93												
94												
95												

End of Boring at 72 Feet
Leachate Piezometer Set at 66.5 Feet

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 4 1/4" ID HSA				BORING NO. W7D					
				SAMPLING METHOD: 5' CME SAMPLE TUBE (0 - 94 FT) 2" OD SPLIT SPOON (94 - 100 FT) SHELBY				SHEET 1 OF 3					
				TUBE (29 - 31 FT)				START	FINISH				
WATER LEVEL				TIME	TIME								
TIME													
DATE													
CASING DEPTH				DATE	DATE								
				4/13/93	4/13/93								
BORING LOCATION: SW 1/4 of SW 1/4 of Section 9 , T 46 N, R 10 E/W NORTHING 2116326.0 EASTING 1053153.3 DATUM ELEVATION 780.2				SURFACE CONDITIONS GRASS COVERED PRAIRIE									
DRILL RIG CME 750 ATV ANGLE Vertical BEARING ----- SAMPLE HAMMER TORQUE FT-LBS													
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS		SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
				WATER CONTENT %	LIMIT %				LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OTHER TESTS	
779.2	-	92		1	Approximately 6 - 12" Black Top Soil, Organic Silt Tan Laminated Silt (ML) With Limonite Precipitate, Grades to More Grayish with Laminated Limonite	SB				33	14		3.0- 1.25
775.2	-	97		2	Gray Laminated Silty CLAY to Clayey SILT (CL/ML) Interbedded with Tan Silt Gray Lean Clay (CL), Little to Some Silt	SB							3.0- 1.25
10	-	98		3	Gray Lean CLAY (CL) with Little to Some Silt, with Laminated Lenses of Silt, Little to Some Fine to Coarse Sand	SB							2.25- 1.25
15	-	97		4	Gray Lean CLAY (CL) Little to Some Silt, Sand Pocket with Coarse Gravel at 15 Feet, Trace to Little Fine to Coarse Sand, and Fine Gravel, Shale Fragments Present	SB							2.5- 3.25
20	-	97		5	Gray Massive Lean CLAY (CL), Trace to Little Silt and Trace Fine to Coarse Sand, Trace Fine to Coarse Gravel, Shale Fragments Approximately 6" Sandy Zone at 20 Ft	SB							2.0- 1.5
25	-	85		6		SB							2.5- 3.0
30	-	92		7	Shelby Tube to 31' Collected CME Tube Sample 29' to 34'	SB							1.5- 2.5
35	-	97		8	Trace Shale Fragments	SB							2.5- 3.0
	-	97		9		SB							2.0-

LOGGED BY **SJC**

DRILLING CONTR **E & F**

Template In. SWL

DATE

9/17/93

CHK'D BY **DAP**

CHAS. MARKGRAF

ID: WM1

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

SHEET
3 OF 3

BORING NO.
W7D

APPENDIX S-5

CROSS-SECTION E-E'

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch, Illinois				DRILLING METHOD: 4 1/4" ID HSA				BORING NO. W2D							
				SAMPLING METHOD: 5' CME SAMPLING TUBE 2" OD SPLIT SPOON (84-88 FT)											
BORING LOCATION: SE 1/4 of SE 1/4 of Section 17, T 46 N, R 10 E/W NORTHING 2116648.2 EASTING 1052499.9 DATUM ELEVATION 770.7				DRILLING											
				START		FINISH									
				TIME		TIME									
				DATE		DATE									
DRILL RIG CME 750 ATV				SURFACE CONDITIONS GRASS COVERED PRAIRIE											
ANGLE Vertical BEARING -----															
SAMPLE HAMMER TORQUE FT-LBS															
DEPTH IN FEET (ELEVATION)	BLOWS/6 IN. ON SAMPLER	RECOVERY %	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIALS				SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
				WATER CONTENT %	LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY				OTHER TESTS				
769.2	-	75		1	Stiff to Very Stiff Reddish Brown Organic Top Soil (OH), Roots to 1 ft then Brown Silty Sandy Clay				SB						1-3.5
766.7	-	83		2	Brown Silty CLAY (CL), Limonite Precipitate, Magnesium Nodules Present				SB						25-1.0
765.7	-			3	Soft to Stiff Brown and Gray Mottled Clayey SILT to Silty CLAY (ML/CL)				SB						2->4.5
761.7	-	75		4	Grades to more silty CLAY (CL) Trace to Little Fine to Coarse Sand and Fine Gravel, Sand Pocket at 9 Ft				SB						1.5-4.0
760.7	-			5	Brown SAND Layer (SP)				SB						2.5-3.0
759.2	-			6	Brown Silty CLAY (CL) to 11.5'				SB						1.5-2.5
756.7	-	100		7	Gray Silty CLAY (CL), Little to Some Fine to Coarse Sand, Trace to Little, Fine to Coarse Gravel, Sand Lens at 12' and 14', Shale Fragments Present				SB						1.5-2.5
752.7	-	95		8	Gravelly Stiff to Very Stiff Gray Silty CLAY (CL)				SB						1.5-2.5
750.7	-	95		9	Gray Very Stiff Lean CLAY (CL), Little to Some Silt, Trace to Little Gravel and Fine to Coarse Sand				SB						1.5-2.5
748.7	-	90			Gray Stiff to Very Stiff Lean CLAY (CL) Little to Some Silt, Trace to Little Fine to Coarse Sand, Trace Fine Gravel				SB						1.5-2.5
746.7	-	90			Shelby Tube 29 - 31' Shale Fragments Present				SB						1.5-2.5
744.7	-	100			Lean Clay (CL) Trace Gravel and Sand				SB						1.5-2.5
742.7	-	93							SB						1.5-2.5
LOGGED BY <u>SJC</u>				DRILLING CONTR <u>E & F</u>											
DATE <u>9/17/93</u>		CHK'D BY <u>DAP</u>		CHAS. MARKGRAF				ID: WM1							

SOIL BOREHOLE LOG

**SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois**

SHEET 2 of 2

BORING NO.
W2D

PROJECT H.O.D. LANDFILL, ANTIOCH, ILLINOIS

15-107 | 62

CLIENT WASTE MANAGEMENT, INC., 900 JORIE BOULEVARD, OAK BROOK, ILLINOIS 60521

BORING T-3C-107 DATE STARTED 8-4-80 DATE COMPLETED 8-4-80 JOB 17,651

ELEVATIONS

GROUND SURFACE _____

END OF BORING _____

AT END OF BORING DRY

24 HOURS

WHILE DRILLING DRY

WATER TABLE SHEET 1 OF 2

LENGTH RECOVERY NO.	SAMPLE NO. TYPE	N	WC	Q _U	DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
0								
5	1	SS 13						FILL - Gray silty CLAY, trace to little sand, trace gravel (CL)
10	2	SS 7				15.8		
15	3	SS 35						
20	4	SS 20				16.3	4.25*	
25	5	SS 24				14.7	4.5+*	
30	6	SS 12				18.3	2.5*	
35	7	SS 15				17.8	1.75*	
40	8	SS 15				17.3	2.25*	

For section E-E'

Distance Below Surface in Feet

Sample 5: 5% GRAVEL

22% SAND

43% SILT

30% CLAY

Hard to tough gray silty CLAY,
little to some sand, trace gravel,
moist (CL)

*Approximate unconfined compression
strength based on measurements with
calibrated pocket penetrometer.

BORING LOG CONTINUED

DRILL RIG NO. 53

TESTING SERVICE CORPORATION

PROJECT H.O.D. LANDFILL, ANTIOCH, ILLINOIS

TSC 107 282

CLIENT WASTE MANAGEMENT, INC., 900 JORIE BOULEVARD, OAK BROOK, ILLINOIS 60521

BORING 107 DATE STARTED 8-4-80 DATE COMPLETED 8-4-80 JOB 17,651

ELEVATIONS

WATER TABLE

GROUND SURFACE _____

AT END OF BORING DRY

END OF BORING _____

24 HOURS _____

WHILE DRILLING DRY

SHEET 2 of 2

Distance Below Surface in Feet	LENGTH RECOVERY	SAMPLE NO.	TYPE	N	WC	Q _u	DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
		9	SS	14	17.3	2.5*				
45		10	SS	16	16.5	3.0*				Sample 10: K = 1.1×10^{-8} cm./sec.
55		11	SS	21	15.3	2.75*				Sample 11: LL = 25, PI = 11
60		12	SS	26	14.8	4.5+*				Sample 12: K = 6.4×10^{-8} cm./sec.
65		13	SS	17	16.3	3.25*			67.0	Hard gray CLAY, some silt, trace sand, moist Sample 14: K = 1.5×10^{-8} cm./sec. 1% SAND 28% SILT 71% CLAY
70		14	SS	26	22.2	4.5+*				* Approximate unconfined compression strength based on measurements with a calibrated pocket penetrometer.
75		End of Boring at 70.0 feet.								
80										

TESTING SERVICE CORPORATION

PROJECT H O D LANDFILL, ANTIOCH, ILLINOIS
 CLIENT WAST MANAGEMENT INC., 1300 WILLOW R, NORTHBROOK, ILLINOIS 60062
 BORING 1+80S, 10+00W DATE STARTED 9-17-84 DATE COMPLETED 9-18-84 JOB 20,E

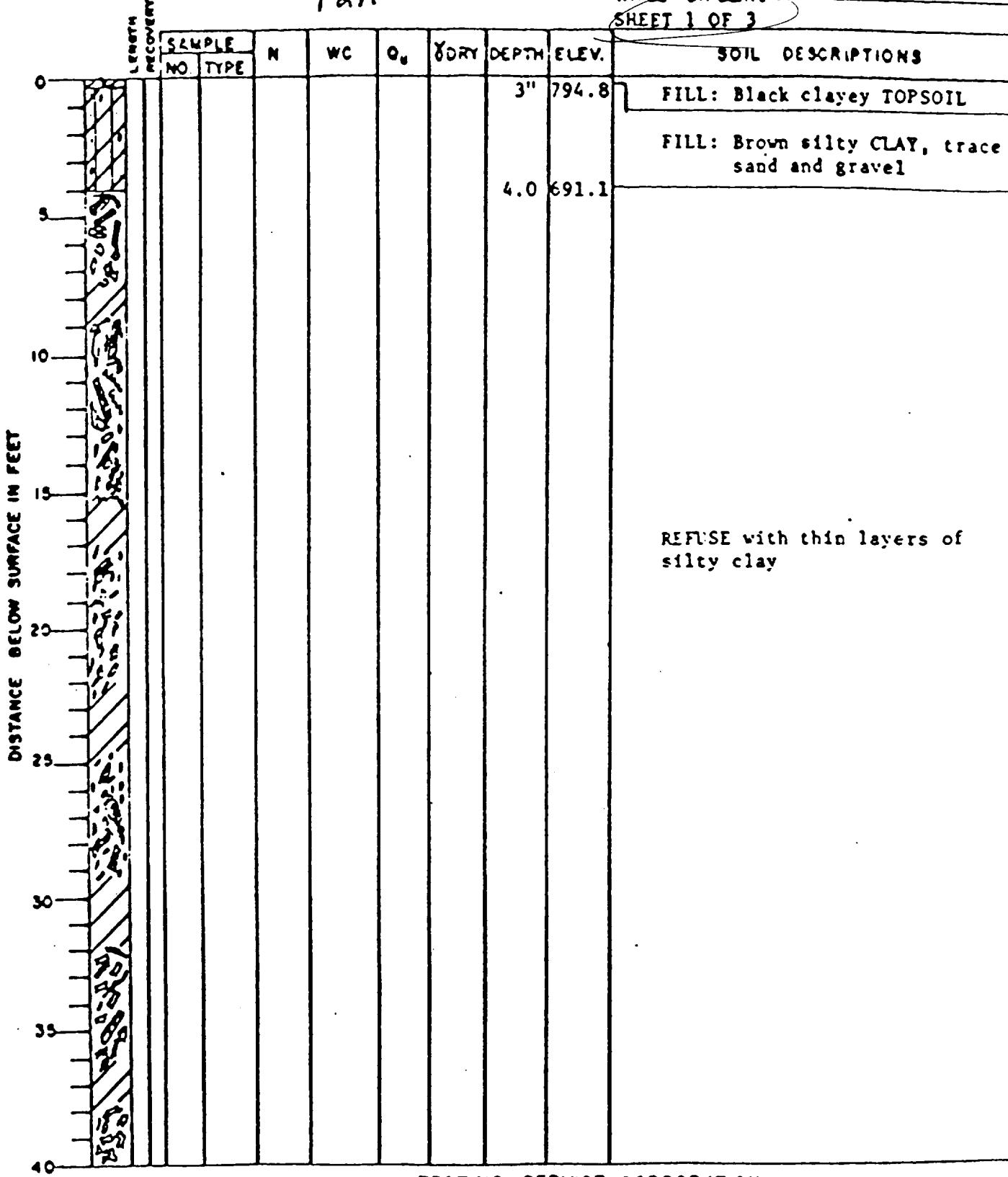
ELEVATIONS

GROUND SURFACE 795.1
 END OF BORING 720.1

WATER TABLE

AT END OF BORING _____
 24 HOURS _____
 WHILE DRILLING _____
 SHEET 1 OF 3

P2A



PROJECT H.O.D LANDFILL, ANTIOCH, ILLINOIS
 CLIENT WASTE MANAGEMENT INC., 1300 WILLOW ROAD NORTHBROOK, ILLINOIS 60062
 BORING 1+805, 10+00W DATE STARTED 9-17-84 DATE COMPLETED 9-18-84 JOB 20

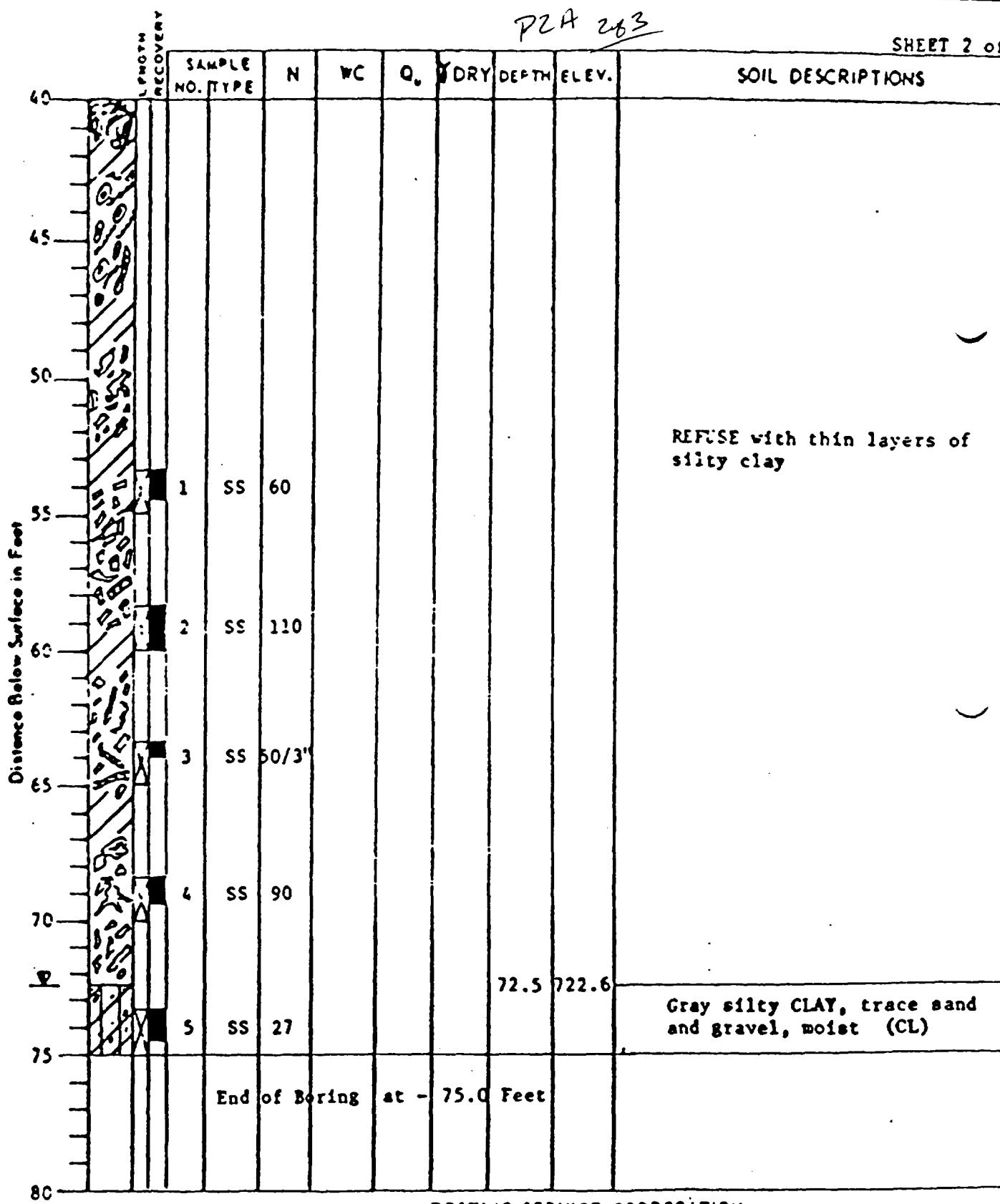
ELEVATIONS

GROUND SURFACE 795.1
 END OF BORING 720.1

WATER TABLE

AT END OF BORING
 84 HOURS

PZA 263 SHEET 2 of



PROJECT H O D LANDFILL, ANTIOCH, ILLINOIS
 CLIENT WAST MANAGEMENT, INC., 1300 WILLOW RD, NORTHBROOK, ILLINOIS 60062
 BORING 1+80S, 10+00W DATE STARTED 9-17-84 DATE COMPLETED 9-18-84 JOB 20,8

ELEVATIONS

GROUND SURFACE 795.1
 END OF BORING 720.1

WATER TABLE

AT END OF BORING

24 HOURS

WHILE DRILLING

SHEET 3 OF 3

TEST NUMBER	SAMPLE NO.	TYPE	N	WC	Q _u	DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
			INSTALLED	LEACHATE	COLLECTION	WELL			
INSTALLED LEACHATE COLLECTION WELL									
1)									Bottom of 65' screen at 71'6" (723.6)
2)									Small gravel backfill from bottom of hole to 4.5'
3)									Bentonite pellets from 4.5 to 3.5'
4)									Portland cement grout with bentonite from 3.5' to surface
5)									Steel protector pipe set in grout
6)									Elevation of top of steel protector pipe: 798.00 (Lid open)
7)									Total length of PVC (screen & solid): 74'0"

DISTANCE BELOW SURFACE IN FEET

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill - Antioch,
Illinois

SHEET

2 OF 2

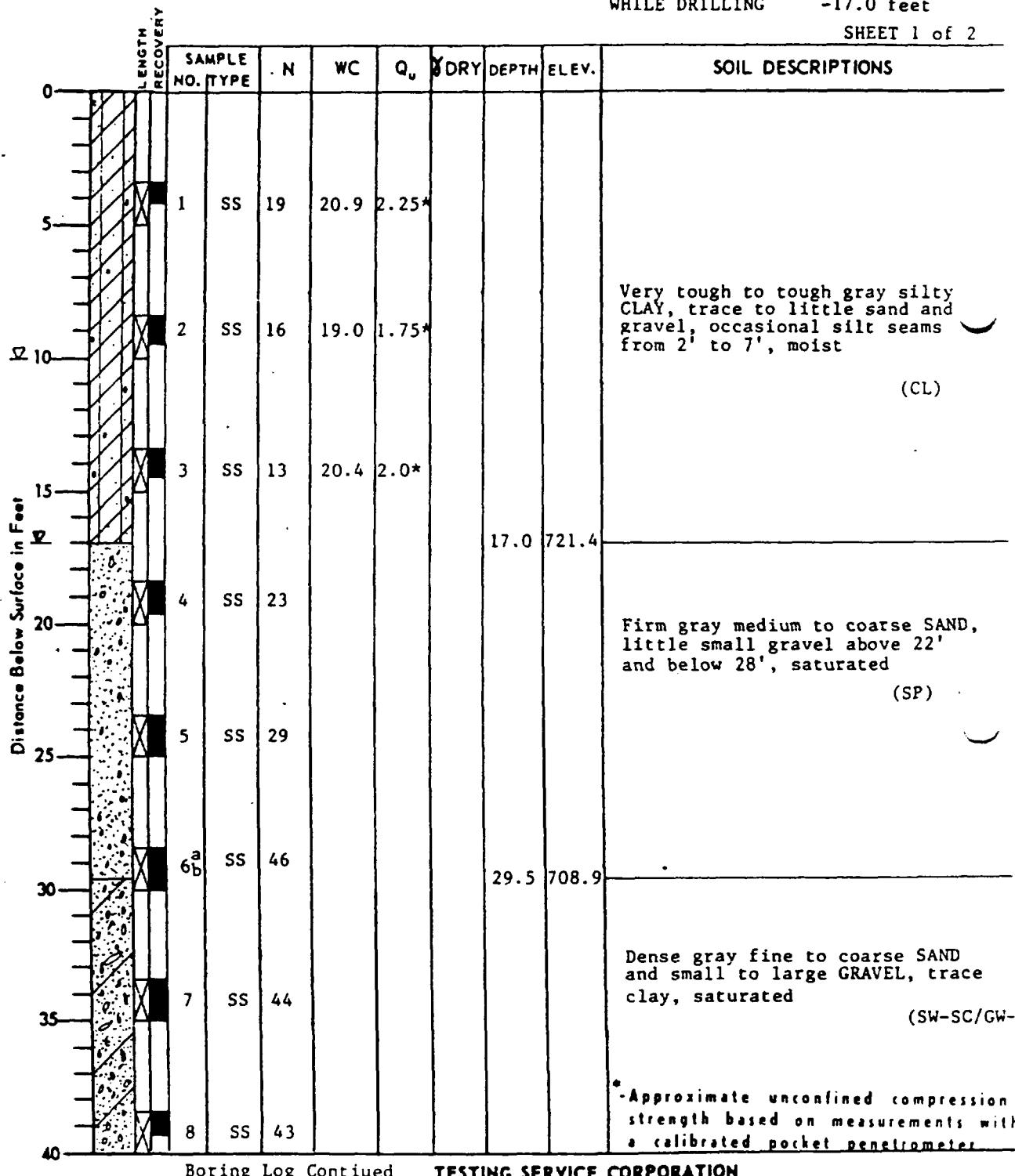
BORING NO.

LP8

PROJECT H.O.D. LANDFILL, ANTIOCH, ILLINOIS TSC 1202 102
 CLIENT WASTE MANAGEMENT, INC., 900 JORIE BOULEVARD, OAK BROOK, ILLINOIS 60521
 BORING TSC 1202 DATE STARTED 2-09-81 DATE COMPLETED 2-09-81 JOB 18.037

ELEVATIONS
 GROUND SURFACE 738.4
 END OF BORING 693.4

WATER TABLE
 AT END OF BORING -10.0 feet
 24 HOURS WHILE DRILLING -17.0 feet
 SHEET 1 of 2



PROJECT H.O.D. LANDFILL, ANTIOCH, ILLINOIS

TSC 1202 262

CLIENT WASTE MANAGEMENT, INC., 900 JORIE BOULEVARD, OAK BROOK, ILLINOIS 60521

BORING 1202(Cont) DATE STARTED 2-09-81 DATE COMPLETED 2-09-81 JOB 18.037

ELEVATIONS

GROUND SURFACE 738.4

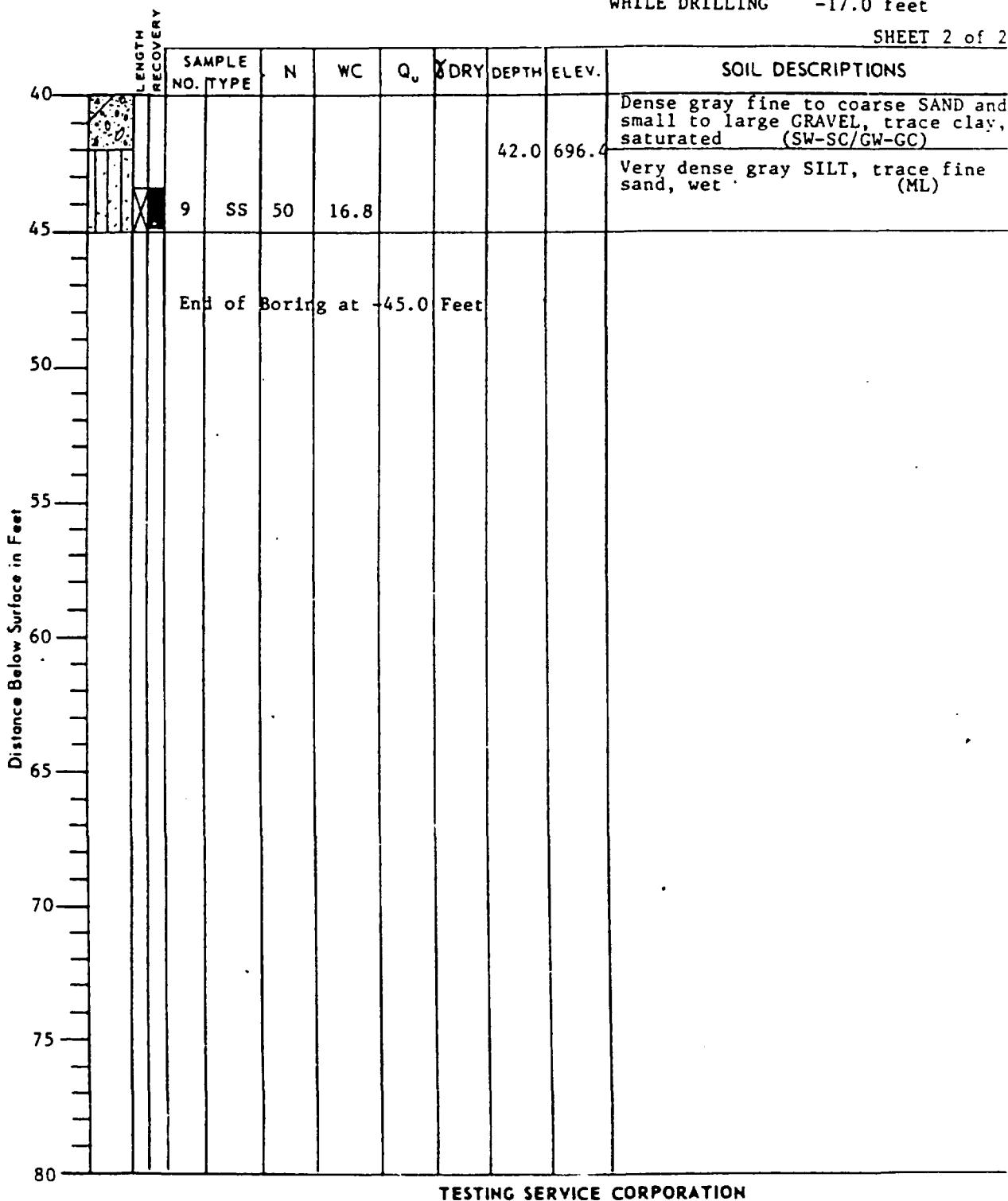
WATER TABLE

END OF BORING 693.4

AT END OF BORING -10.0 feet

24 HOURS WHILE DRILLING -17.0 feet

SHEET 2 of 2



SOIL BOREHOLE LOG

SITE NAME AND LOCATION		DRILLING METHOD 4 1/4" Inside Diameter		DRAULING NO.			
H.O.D. Landfill Antioch, Illinois		Hollow Stem Auger		PZ-6U			
SAMPLING METHOD 2" Split Spoon, 24" samples		SHEET 1 of 6		DRILLING			
Adjacent to seal area southeast of landfill.				START	FINISH		
DATUM	MSL	ELEVATION	763.70 GSE	WATER LEVEL	TIME		
DRILL RIG CME 55 ATV		SURFACE CONDITIONS		TIME			
ANGLE	vertical	BEARING	Grassy Area		1:57		
SAMPLE HAMMER TORQUE		140 FT-BLS		DATE		2:30	
DEPTH IN FEET (ELEVATION)		SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		TEST RESULTS		DATE	
1.0 - 3.0		BLOWS/ 6IN. ON SAMPLER (RECOVERY)		SAMPLER & BIT		4/25/90	
3.0 - 5.0		SYMBOL		CASING TYPE		4/26/90	
5.0 - 50.70		DESCRIPTION OF MATERIAL		BLOWS/FOOT ON CASING		Patrick Engineering	
50.70 - 7.0		TEST RESULTS		WATER CONTENT %		P.E. LAMOREAUX & ASSOCIATES, INC. (PELA)	
7.0 - 9.0		SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		LIQUID LIMIT %		Modified from Waste Management Inc.	
9.0 - 11.0		TEST RESULTS		PLASTIC		LOGGED BY	
11.0 - 13.0		SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		SPECIFIC GRAVITY		CHK'D BY	
13.0		TEST RESULTS		OTHER TESTS		DRILLING CONTR	
13.0		No Recovery.				4/25/90	

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois		DRILLING METHOD 4 1/4" Inside Diameter Hollow Stem Auger					BORING NO. PZ-6U			
		SAMPLING METHOD 2" Split Spoon, 24" samples					SHEET 2 of 6			
Adjacent to seal area southeast of landfill.							DRILLING			
							START	FINISH		
		WATER LEVEL					TIME	TIME		
		TIME					1:57	2:30		
		DATE					DATE	DATE		
DATUM MSL ELEVATION 763.70 GSE		CASING DEPTH					4/25/90	4/26/90		
DRILL RIG CME 55 ATV				SURFACE CONDITIONS Grassy Area						
ANGLE vertical		BEARING								
SAMPLE HAMMER TORQUE 140 FT-BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	TEST RESULTS		
			WATER CONTENT %	LIQUID LIMIT %	PLASTIC			SPECIFIC GRAVITY	OTHER TESTS	
13.0 - 15.0	(24")		Fill/Clay: Dark olive gray (5Y 3/1), silty, soft, moist, with 10% fine to coarse grained sand, trace of fine gravel. Pushed spoon.							
15.0 - 17.0	1, 2, 1, 2 (13")		Fill/Clay: As above.							
17.0 - 19.0	(24")		Fill/Clay: As above. Pushed spoon.							
19.0 - 21.0	(24")		Fill/Clay: Dark olive gray (5Y 3/1), silty, with 20% medium to coarse grained sand and fine gravel to 1/2", soft. Pushed spoon.							
21.0 - 23.0	(17")		Fill/Clay: Dark olive gray (5Y 3/1), silty, 5% fine to medium grained sand, trace fine gravel, moist, dense. Pushed spoon.							
23.0 - 25.0	6, 5, 5, 4 (13")		Fill/Clay: As above.							
PRELIMINARY DRAFT SUBJECT TO REVISION										

Particulate Engineering

DRILLING CONTR

CHK'D BY
4/25/90

DATE

0269

LOGGED BY Jay S. Johnson

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois Adjacent to seal area southeast of landfill.		DRILLING METHOD 4 1/4" Inside Diameter Hollow Stem Auger		BORING NO. PZ-6U	
		SAMPLING METHOD 2" Split Spoon, 24" samples		SHEET 3 of 6	
				DRILLING	
				START	FINISH
		WATER LEVEL		TIME	TIME
		TIME		1:57	2:30
		DATE		DATE	DATE
DATUM MSL	ELEVATION 763.70 GSE	CASING DEPTH		4/25/90	4/26/90

DRILL RIG CME 55 ATV	SURFACE CONDITIONS Grassy Area
ANGLE vertical	BEARING
SAMPLE HAMMER TORQUE 140 FT-BLS	

DEPTH IN FEET (ELEVATION)	BLOWS/6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS			
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
25.0 - 27.0	(24")		Fill/Clay: Dark olive gray (5Y 3/1), silty, with 10% medium to coarse grained sand, trace fine to medium gravel to 1", dense. Pushed spoon.							OTHER TESTS
27.0 - 29.0	(8")		Fill/Clay: Silty, dark olive gray (5Y 3/1), with 10% medium to coarse grained sand, soft. Pushed spoon.							
29.0 - 31.0	(15")		Fill/Clay: Dark olive gray (5Y 3/1), silty, with 10% medium to coarse grained sand and trace gravel to 1", soft, moist. Pushed spoon.							
31.0 - 33.0	(24") CL		Clay: Dark olive gray (5Y 3/1), to moderate yellowish-brown (10YR 5/4), silty, with trace granules, very dense, mottled, slightly oxidized. Pushed spoon. Dmm.							
33.0 - 35.0	(14") SW		6" Sand: Trace very coarse grained sand, moderately sorted, grading to 6" gravel, fine grained, poorly sorted with Sand (20%): Fine to very coarse grained, clayey, silty. 2" Clay at base, very silty, trace fine gravel. Sample is olive gray (5Y 4/1). Pushed spoon. Sg.							
35.0 - 36.0			Not sampled.							

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois Adjacent to seal area southeast of landfill.			DRILLING METHOD 4 1/4" Inside Diameter Hollow Stem Auger			BORING NO. PZ-6U		
			SAMPLING METHOD 2" Split Spoon, 24" samples			SHEET 4 of 6		
						DRILLING		
						START	FINISH	
			WATER LEVEL			TIME	TIME	
			TIME			1:57	2:30	
			DATE			DATE	DATE	
DATUM MSL ELEVATION 763.70 GSE			CASING DEPTH			4/25/90	4/26/90	
DRILL RIG CME 55 ATV			SURFACE CONDITIONS Grassy Area					
ANGLE vertical BEARING								
SAMPLE HAMMER TORQUE 140 FT-BLS								
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	TEST RESULTS		
				BLOWS/FOOT ON CASING	WATER CONTENT %	LIQUID LIMIT %	PLASTIC	SPECIFIC GRAVITY
36.0 - 38.0	(24")	SP	18" Sand: Medium to coarse grained, well sorted, with trace granules grading to Sand: Fine to coarse grained, moderately sorted with 15% granules, 10% silt. Grades to gravel 40% to 1/2", sandy, silty, moderately sorted, medium olive gray (SY 5/1). Sg.					
38.0 - 40.0	17, 6, 5, 6 (16")	SM	8" Gravel: As above. 8" Sand: Very fine to very coarse grained, poorly sorted, very silty, clayey, with 10% gravel to 1.25", medium olive gray (SY 5/1). Abrupt contact. Sg - Dcg.					
40.0 - 42.0	3, 4, 5 9 (12")	SW	Sand: Very fine to very coarse grained, poorly sorted, with 10% very fine gravel, very silty, some clay, medium olive gray (SY 5/1). Dcg.					
42.0 - 44.0	11, 12, 15, 18 (10")	SW	4" Sand: Very fine to very coarse grained, very poorly sorted, with 25% gravel to 1/2", silty, clayey, olive gray (SY 4/1). Dcg.					
44.0 - 46.0	10, 20, 46, 20 (15")	CL SW	2 - 3" Alternate layers of clay, dense, silty with Sand: Very fine to very coarse grained, poorly sorted with 1/4" gravel, silty, clayey. Abrupt contacts. Dms.					
46.0 - 48.0	10, 11, 8, 11 (16")	CL SW	4" Clay: Very sandy (30%), silty (20%), with trace granules and 1/4" gravel. 12" Sand (50%): Very fine to very coarse grained, with 10%, 1/4" gravel, zones of sandy clay, as above, olive gray (SY 4/1). Dms - Sg.					

DRAFT FOR REVIEW

SOIL BOREHOLE LOG

SITE NAME AND LOCATION			DRILLING METHOD 4 1/4" Inside Diameter		BORING NO.
H.O.D. Landfill Antioch, Illinois			Hollow Stem Auger		PZ-6U
			SAMPLING METHOD	2" Split Spoon, 24" samples	SHEET 5 of 6
Adjacent to seal area southeast of landfill.					
DEPTH IN FEET (ELEVATION)	DRILL RIG	CME 55 ATV	SURFACE CONDITIONS	Grassy Area	DRILLING CONTR
ANGLE	vertical	BEARING	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	TEST RESULTS	Patrick Engineering
SAMPLE HAMMER TORQUE	140 FT-BLS		SAMPLER & BIT		
SYMBOL			CASING TYPE		
DEPTH IN FEET (ELEVATION)	BLows/ 6in. O N SAMPLER (RECOVERY)	SYMBOL	BLows/Foot ON CASING	WATER CONTENT %	TIME
ANGLE	vertical	BEARING		LIQUID LIMIT %	TIME
SAMPLE HAMMER TORQUE	140 FT-BLS			PLASTIC	DATE
DATUM	MSL	ELEVATION	CASING DEPTH	SPECIFIC GRAVITY	DATE
48.0	9, 13	CL	4" Sand (50%): Very fine to very coarse grained, with 10% granules and trace 1/4" gravel.	4/25/90	4/26/90
50.0	11, 12	(10)	5" Clay: Massive, silty, very dense, with trace coarse sand, olive gray (5Y 4/1). Abrupt contact: Sm - Dnm.		
52.0	11, 14,	SP	4" Sand (50%): Very fine to very coarse grained, with 10% granules and trace 1/4" gravel.		
	13, 16	CL	6" Clay: Massive, silty, very dense, with trace coarse sand, olive gray (5Y 4/1). Abrupt contact: Sm - Dnm.		
52.0	10, 2,	SM	Sand (40%): Very fine to very coarse grained, very poorly sorted, with 20% gravel to 1/2" very silty, clayey, olive gray (5Y 4/1). Dcm(r).		
54.0	21, 17	(10)			
56.0	19, 18,	SC	6" Sand: Very fine to very coarse grained, moderately sorted, with trace gravel to 1/2", very clayey, silty, olive gray, (5Y 4/1). Dcm(r).		
58.0	20, 35	(12)			
58.0	23, 16,	GW	Gravel (40%): Very poorly sorted to 1.5", with Sand (30%): Very fine to very coarse grained, silty, sandy, olive gray (5Y 4/1). Dcm(r).		
60.0	15, 14,	(14)			
	GW		12" Gravel and Sand: As above.		
	CL		4" Clay: Massive, very dense, silty, olive gray (5Y 4/1).		
			2" Gravel and Sand: As 58.0. Abrupt Contact: Dcm(r) - Dnm.		

CONFIDENTIAL DRAFT FOR REVIEW ONLY

LOGGED BY Jay S. Johnston

SL 30272

DATE

4/25/90

CHK'D BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

H.O.D. Landfill
Antioch, Illinois

Adjacent to seal area southeast of
landfill.

DRILLING METHOD 4 1/4" Inside Diameter

Hollow Stem Auger

BORING NO.

PZ-6U

SHEET

6 of 6

SAMPLING METHOD 2" Split Spoon, 24" samples

DRILLING

START

FINISH

WATER LEVEL

TIME

TIME

TIME

1:57

2:30

DATE

DATE

DATE

DATE

4/25/90

4/26/90

Patrick Engineering

DATUM MSL ELEVATION 763.70 GSE

DRILL RIG CME 55 ATV

SURFACE CONDITIONS Grassy Area

ANGLE vertical BEARING

SAMPLE HAMMER TORQUE 140 FT-BLS

SAMPLE NUMBER AND DESCRIPTION OF MATERIAL

DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. O' Z SAMPLER (RECOVERY)	SYMBOL	TEST RESULTS	
			SAMPLER & BIT	CASING TYPE

WATER CONTENT %	LIQUID LIMIT %	PLASTIC	TEST RESULTS	
			SPECIFIC GRAVITY	OTHER TESTS

DEPTH IN FEET (ELEVATION)	ANGLE vertical	BEARING	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL
60.0 - 62.0	11, 26, 16, 16	GW	Gravel (40%): Very poorly sorted to 1.25"; with Sand (20%): Very fine to very coarse grained, silty, with clay balls. 2. Massive, silty, clay at top of spoon. Abrupt contacts. Dom(r). (15")
62.0 - 64.0	21, 20, 24, 20	GM	Gravel: Very poorly sorted to 2.5", with Sand (20%): Very fine to very coarse grained, very silty, clayey, gravel is subangular to subrounded, olive gray (5Y 4/1). Dom(r). (10")
64.0 - 66.0	11, 12, 14, 11	CL	Clay: Olive gray (5Y 4/1), silty, dense, massive, with trace coarse sand and gravel to 1.5". Dnm.
66.0 - 68.0	11, 11, 12, 10	CL	Clay: Olive gray (5Y 4/1), silty, with trace coarse sand and granules, massive, very dense, few vertical sand seams at base. Dnm. (22")

Total Depth: 68.0'

LOGGED BY Jay S. Johnston SL 30273

DATE 4/25/90

CHK'D BY _____

DRILLING CONTR _____

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois South-Central portion of landfill northeast of LB-9				DRILLING METHOD Hollow-stem auger				BORING NO. PZ-4U		
				SAMPLING METHOD Split Spoon, 24" samples				SHEET 1 of 3		
								DRILLING		
				START		FINISH				
				WATER LEVEL	3.49	bmp		TIME	TIME	
				TIME	10:35			10:50	1:30	
				DATE	3/19/90			DATE	DATE	
				CASING DEPTH				3/6/90	3/6/90	
DATUM MSL ELEVATION 763.36 LS				SURFACE CONDITIONS Peat marsh						
DRILL RIG CME 55 ATV				ANGLE vertical BEARING						
SAMPLE HAMMER TORQUE 140 ft./BLS										
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL			SAMPLER & BIT	CASING TYPE	TEST RESULTS		
			WATER CONTENT %	Liquid Limit %	Plastic			Specific Gravity	Other Tests	
1.0 - 3.0	1, 1, 2, 1 (2)	PT	Peat/Topsoil: Brownish-black (SYR 2/1).							
3.0 - 5.0	5, 6, 8, 12 (7)	PT ML	3" Peat. 4" Organic Silt: Clayey, sandy, mottled, medium gray (NS). Fsc.							
5.0 - 7.0	10, 8, 2, 3 (4")	PT	Peat: Brownish-black (SYR 2/1). Fsc.							
7.0 - 9.0	2, 2, 4, 5 (24")	CL	24" Clay: Massive, silty, dense, light olive gray (SY 6/1), trace 1/4" gravel, some sandy zones. Dmm(r).							
9.0 - 11.0	2, 3, 3, 5 (15")	SP	6" Sand: Graded, medium to very coarse grained, grading to fine gravel with 30%, as above. Sq. 11" Sand: Fine to medium grained, well sorted, with trace 1/4" gravel, silty, light olive gray (SY 6/1). St.							
11.0 - 13.0	6, 5, 5, 6 (16")	SP	Sand: Very fine to very coarse grained, moderately sorted, with trace 1/4" gravel, silty, trace of clay, light olive gray (SY 6/1). St.							

DO NOT USE THIS LOG

DATE: 3/6/90 BY: W.J. Power

SOIL BOREHOLE LOG

SITE NAME AND LOCATION H.O.D. Landfill Antioch, Illinois South-Central portion of landfill northeast of LB-9		DRILLING METHOD Hollow-stem auger				BORING NO. PZ-4U
						SHEET 2 of 3
		SAMPLING METHOD Split Spoon, 24" samples				DRILLING
DATUM MSL	ELEVATION 763.36 LS	WATER LEVEL	3.49	fbmp		START
		TIME	10:35			TIME
		DATE	3/19/90			DATE
		CASING DEPTH				3/6/90
						3/6/90

DRILL RIG CME 55 ATV	SURFACE CONDITIONS Peat marsh					
ANGLE vertical	BEARING					
SAMPLE HAMMER TORQUE 140	ft./BLS					
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER & BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SYMBOL				

13.0 - 15.0	6, 6, 9, 11 (20")	SP	Sand: Very fine to coarse grained, with trace granules, silty in part. 3" Zones of gravelly sand, moderately to well sorted, light olive gray (5Y 6/1). St.			
15.0 - 17.0	3, 4, 7, 7 (20")		Sand: As above.			
17.0 - 19.0	9, 9, 8, 9 (20")	SP	6" Sand: As above. St. 3" Sand: Very fine to coarse grained. Sg. 8" Sand: Very fine to coarse grained, trace 1/4" gravel, moderately sorted. Sg. 3" Sand: Very fine grained, silty, light olive gray (5Y 6/1), abrupt contacts. Sr.			
19.0 - 21.0	6, 8, 9, 10 (20")	SP	10" Sand: Fine to coarse grained, well sorted, trace granules, trace gravel to 1". Sg. 6" Sand: Very fine grained, silty, dense. Sm. 4" Sand: Very fine to very coarse grained, with 5% granules, moderately sorted, light olive gray (5Y 6/1). St.			
21.0 - 23.0	9, 10, 12, 14 (14")	SW	Gravel: Fine to medium grained to 1.5", with 20% Sand: Medium to coarse grained, moderate to poorly sorted, light olive gray (5Y 6/1). Gm.			
23.0 - 25.0			Augered - Did not sample.			

PRELIMINARY DRAFT
SUBJECT TO REVISION

LOGGED BY Jay S. Johnston DATE 3/6/90 DRILLED BY W. J. Powell DRILLING CONTR 33030

SOIL BOREHOLE LOG

SITE NAME AND LOCATION		SOIL BOREHOLE LOG	
H.O.D. Landfill Antioch, Illinois		DRILLING METHOD Hollow-stem auger	
South-Central portion of landfill northeast of LB-9		BOREHOLE NO. PZ-4U	
SAMPLING METHOD Split Spoon, 24" samples		SHEET 3 of 3	
DATUM MSL ELEVATION 763.36 LS		DRILLING	
DRILL RIG CME 55 ATV		WATER LEVEL	3.49
ANGLE vertical		TIME	10:35
SAMPLE HAMMER TORQUE 140 ft./BLS		DATE	3/19/90
SAMPLE NUMBER AND DESCRIPTION OF MATERIAL		SURFACE CONDITIONS	Peat marsh
DEPTH IN FEET (ELEVATION)	BLOWS/ 6IN. ON SAMPLER (RECOVERY)	SAMPLER & BIT	TEST RESULTS
	SYMBOL	CASING TYPE	
		BLOWS/FOOT ON CASING	
		WATER CONTENT %	
		LIQUID LIMIT %	
		PLASTIC	
		SPECIFIC GRAVITY	
		OTHER TESTS	
25.0 - 27.0	6, 7, 7, 8 (127)	CL	s" Gravel: As above. Gm. 6" Clay: Massive, silty, dense, light olive gray (5Y 6/1). Dmm.
27.0 - 29.0	6, 7, 9, 12 (127)	CL	Clay: Massive, silty, dense, with trace gravel to 1/4", light olive gray (5Y 6/1). Dmm.
29.0 - 31.0	5, 6, 9, 11 (167)	CL	Clay: Silty, massive, dense, with trace gravel to 1/8", light olive gray (5Y 6/1). Dmm.
31.0 - 33.0	8, 10, 16, 11 (247)	CL	Clay: As above. Dmm.
Total Depth: 33.0'			
TEST REPORT COPY DRAFT			
SUBMITTED BY			

LOGGED BY Jay S. Johnston SL30234

DAT 3/6/90

CHKD BY W.J. Powell 3/30

DRILLING CONTR Patrick Drilling